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THE
Alienist and Neurologist
A QUARTERLY JOURNAL
OF
Scientific, Clinical and Forensic
Psychiatry and Neurology.

*Intended especially to succor the wants of the
General Practitioner of Medicine.*

"Quantam ego quidem video motus morbi fere omnes a motibus in systemate nervorum ita pendent,
ut morbi fere omnes quodammodo Nervosi dici queant."—*Cullen's Nosology: Book II., p. 181—Edinburgh E.J. 1780*

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NO. 1.

ORIGINAL CONTRIBUTIONS.

SEXUAL PERVERSION.*

By WILLIAM LEE HOWARD, M. D., Baltimore, Md.

TO draw an incised line between true sexual perversion and illegal vice is no easy task. The subject has been so fully dealt with by such able men as Krafft-Ebing, Schrenck-Notzing, Lombroso, Moll, Ellis, and others, equally qualified to put the matter on a scientific basis, that I shall only attempt to give an account of some cases that have come under my observation; realizing that only from future study of this subject from more extensive facts can we instruct our law makers so that this unfortunate class of sexual perverts can be dealt with in a more humane manner than at present. That crimes, murders especially, are committed through the insane jealousy of homo-sexuals and young women who practice Lesbian love and mutual manustupration is now well-known. I shall confine my short paper to one subject; the histories of a few sexual perverts, not encroaching on the broader field of inversion.

* A paper read at the Summer Meeting of the Medico-Legal Society, New York, September 4, 5 and 6, 1895.

Any one who will take the trouble to read E. Lamairesse's translation of the "Kama Soutra will find the most complete and exhaustive account of sexual perversion at the time Soutra wrote. One can scarcely believe in the present degeneration after reading this work.

The following case came under my observation a short time ago. W. N., 40 years of age. By profession a musician. A man of great musical talent, and one who had held several high positions as an organist. He had lost position after position, as he could not be depended upon. If he had been hired to play for some fashionable wedding, or an important church function he would often not make his appearance. Especially was this so if he had great responsibility and had been working hard on the preparations. Drink was the cause always assigned to account for his erratic conduct, and for the past ten years his life has been spent in taking some of the so-called cures for the liquor habit, and filling engagements when his misguided friends thought that his return from each different "cure" had made a reliable man of him. During his normal condition he was a polished gentleman in every respect; courteous and brilliant. He would spend weeks rehearsing for an organ recital up to the hour of the performance, when suddenly a great change in his whole individuality would take place. His face would be pale, his muscles twitch and he had the appearance of one afflicted with paralysis agitans, and his walk was a quick, jerky gait. He seemed to have lost his identity; to be a second personality, devoid of any knowledge of his engagements or responsibility. He would resort to the lowest dives and drink the vilest concoctions. The amount he consumed was small. However, when he was discovered his whole appearance, attitude and the odor of liquor upon him, caused his church friends to pronounce him drunk. As a last resort he was sent to me to see what hypnotism would do for him. He was in a very low physical state when I saw him, and he died some ten months after of pulmonary tuberculosis. His father had died of the same disease when

N. was an infant. His mother was a neuropath. He gave me the following history: From early youth his only companion had been his nervous mother. He was not brought up with children of his own sex, but continually with his mother's friends. He early developed musical talent and was allowed to cultivate it. After practicing for some time at the organ he would become very nervous, a condition bordering upon hysteria. He was of a very slight frame and somewhat effeminate in appearance. There were traces at times of a normal heterosexual instinct. After one of these nervous attacks, when he was about 20 years of age, he was suddenly seized with a passion to practice buccal onanism, and grasped the opportunity that offered itself in one of the choir boys. He found in the ingestion of the semen his longed for sedative, and from that time forward when these attacks came he was oblivious to everything else except his one passion. He would stop at no crime to obtain his desires. He told me that he knew that he would not stop at murder to obtain his quantum of this disgusting stimulant. After getting what he insanely craved he would become himself again for several weeks; the periods of desire becoming more frequent up to the time of death. The morning he died he had one of these paroxysms, and vainly tried to get out in the street to find a passive subject. He had no desire or inclination toward pederasty or sodomy (*immissis penis in anum*), but his advice to others was, *Ut in os semen, injiciatur atque semen devoret*. He would even steal petty articles to sell in order to obtain money to pay for a passive male prostitute. Several times he had been caught by the police while in this lycanthropic condition attempting to secure his sedative, and sent to jail. He told me that he did not realize at the time that he was doing anything but that was natural, and if he had succeeded in obtaining his pabulum before caught, the disgrace and shame of being arrested was the cause of bringing on another attack almost immediately; were he caught before the act was accomplished the whole proceedings was a blank to him until he obtained his abnormal stimulant from some of his

jail companions. It is not necessary for me to comment on this case. It carries its own moral.

Among prostitutes sexual perversion is often quite frequent, but it is of the acquired form. From those I have questioned about their habits, I surmise that they are acquired by those of great sensuality who have become satiated with the normal conditions and from constant intercourse with perverse and senile men rapidly fall into these disgusting habits. We have the statements of prostitutes who cohabit with donkeys and large dogs that they have no longer any desire for men. But as these are mostly acquired cases they scarcely call for much attention on the part of the student of congenital sexual perversion.

The following case presents some aspects of perversion that I have not heretofore seen reported. Mrs. W., aged 39 years, was sent to me about a year ago. She was a chronic masturbator. Had practiced Lesbian love at boarding school. Was married to a strong healthy man when about 20 years of age. She states that she derived no pleasure during sexual intercourse, but received great pleasure from musturbation immediately after the normal coitus. Has no longer desire for Lesbian love. About ten years ago she ceased having any actual sexual intercourse with her husband, but forced him to mutual self-abuse. She got men into her house at all hours of the day and night, and after compelling them to expose their person, would immediately retire to her room for the purpose of self-pollution. The strangest feature of the case is, that no desire is aroused by seeing the same man more than once. Hence she is a constant searcher for strange men. So violent and persistent has this perverted passion become that she will actually invade strange houses, clubs, theatres and public places and pounce upon her victim. She will lay hands upon him, and rapidly retreat to the first convenient place for self-gratification. Her husband left her several years ago after trying to get her legally committed to an insane asylum. She has often been arrested by the police for her actions, but through the mistaken kind intervention of friends allowed to go free. She is a very intelligent

woman, and aside from this perversion in every way is a respectable woman. This is a case of true sexual perversion, not a case of unsatisfied hyperesthesia sexualis. She once stole a pair of trousers that she had seen a man wear, and after fondling them had a true venereal orgasm. She was caught stealing these trousers in a boarding house.

I know of the case of a boy aged 16 years who had ample opportunity of gratifying normal passions, but who was indifferent to the opposite sex. He was very mature for his age and a fairly bright boy. His parents lived in the city, but as the youth had an inordinate desire for the country he was sent to school in Connecticut. He had only been in the village a day before a farmer missed a sow, and it was found secreted in an out-house on the school grounds. He acknowledged the theft and the master was overlooked. In a few days he stole another one. The boy was pronounced a thief, and thus branded, was sent away. He remained home in disgrace for several days and then disappeared. He returned dirty and reeking with foul odors. He was then watched and followed, and finally traced to a barn on the outskirts of the city where he was caressing a filthy old sow. So strong was his passion that force had to be used to take him away. Every opportunity was given him to create a normal sexual desire without any favorable result. He did not masturbate, and when under restraint showed no inclination toward sexual perversion with other animals. His nocturnal pollutions, which were frequent, were always accompanied by mental pictures of a wallowing sow. After being released from a private institution his first act was to steal money enough to purchase a sow. He was then placed in an institution for an indefinite time, failed rapidly in mental and physical vigor, and died at the age of 23 years.

That a certain lack of moral sense is generally an attribute of the personality of the sexual pervert has been my experience. Of course I refer to a lack of morality aside from the concomitant of the perversion. One can readily understand the committing of crime to satisfy their

abnormal passion, but aside from this they are not to be trusted as a rule. To-day there is a man in the Connecticut State's Prison condemned for stealing funds from a bank where he had been a trusted officer for years. It was well-known that he was a buccal onanist, yet he was allowed to retain a responsible position. There are a large number of persons to-day condemned as criminals, or as hopelessly insane, who, if they had been properly understood, would have been placed under the merciful treatment they require. To place the sexual pervert in jail or commit him as an insane person is to push him over the borderland that lies between mental alienation and sanity. Especially is this true of acquired sexual perversion.

I have purposely avoided taking up your time by not commenting on these few cases presented to you. A complete and thorough knowledge of the subject of sexual perversion and inversion considered as a disease is necessary to the jurist of to-day. They must be able to distinguish the congenital from the acquired form as a disease, from the vulgar vice of the male and female prostitute. As Krafft-Ebing says: "Every anomaly of the psychosexual emotion must be described clinically as a functional sign of degeneration."

The Sensory Nervous System in Diagnosis.

The Reflexes.

A CONTRIBUTION FOR COLLEGE STUDENTS.*

By CHAS. H. HUGHES, M. D.

Professor of Neurology, Psychiatry and Electrotherapy in Barnes Medical College, St. Louis.

THE nervous system has much more to do with the diagnosis of diseases than would at first glance appear, for it is largely through the nervous system that clinical symptomatology is possible. The morbid touching of the heat centers and the disturbance of the vaso-motor centers by toxic agents which have found their way into the blood, gives us the phenomenon of fever or chill. The chill and fever of an intermittent or precedent rigors of a pneumonia, the tremors of alcoholic toxæmia, the spasms (opis, emplos or pleuros-thotonos) of tetanus, the decubitus of cerebro-spinal meningitis, the attitudes of hysteria, the convulsions of epilepsy, or the delirium of typhoid, are all revealed to us through nerve centers morbidly touched by the

*Initial Lecture of Course on Neuriatry in Barnes' Medical College.

disturbing fingers of disease. It may be, as in the muttering delirium of the last stages of typhus or typhoid that "the life of all the blood of the patient is touched corruptibly and his poor brain doth by the idle comments that it makes foretell the ending of mortality"; or vital nerve centers are primarily involved and the metabolisms of the organic life are deranged, as in the malassimilations of nervous exhaustion (neurasthenia, aepsia and dyspepsia nervosa, hepatic torpidity, constipation, etc); but wherever the disturbance begins or ends, it is through the nervous system that morbid signs are shown and symptomatology is revealed. Nerve tone is the life of the organism though the blood be also "the life thereof."

It is when centers of organic life take from the blood "the life thereof" in due proportion of rebuilding pabulum, that they imbibe and maintain their due physiological life and vigor and the neuro-psychic machine with normal power and physiologic rythm. The nerve centers themselves are primarily at fault in primary nervous conditions as in the neuropathic diathesis; they are secondarily affected when the blood is first impaired in quality or quantity of reconstructive ingredients or poisoned, and disease follows from tox-haemic or cacaemic conditions, as in the delirium grave or typhomania of typhus or typhoid, anaemic neurasthenia or the cephalalgia or neuralgia of malaria.

Recipient and conducting or afferant nerves carry peripheral impressions to the posterior columns of the cord or directly to the brain. If the impression goes to a center in the cord and is passed over to the anterior columns transformed into motion without the intervention of the brain, the whole phenomenon, sensation and involuntary motion, is called a spinal reflex—and these reflexes may be either physiological (*i. e.*, natural) or pathological (*i. e.*, not natural to particular nerve arcs). The reflex arc is the track of sensation from the distal end of a sensory nerve to the cord center, passed over across the cord from posterior to anterior horns and converted into sudden movement from central to distal end of motor nerve, completing the reflex arc thus:

ANTERIOR ASPECT.

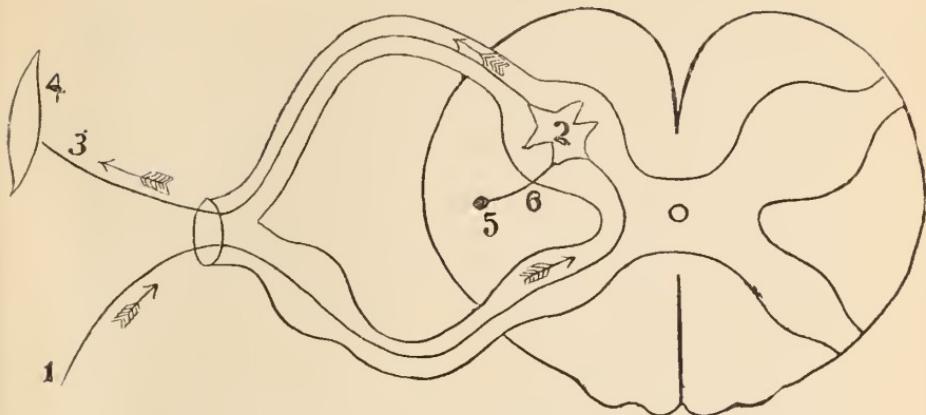


FIG. 1.—Schematic Section of Spinal Cord and Nerves, Illustrating a Reflex Arc.
1. Fibre (afferent) for sensation from periphery to spinal cord; 2. Motor cell of cord, where sensory impression is transformed into motor impulse; 3: Motor (efferent) fibre conveying motor impulse from cord to peripheral muscle (4); 5. Inhibitory conducting fibre from brain with connecting fibre (6) to motor cell (2).

Reflexes have been divided into skin or superficial reflexes and tendon or deep reflexes, or jerks; and into organic or physiological and pathological. Some authors do not consider the tendon jerks as true reflexes, but I so regard them and think they are quite as emphatically entitled to be considered as true reflexes as the skin reflex phenomena. All reflexes are dependent on spinal cord or sympathetic or ganglionic or brain central connections, and I see no need of any confusing differentiation, since the principle of their display is the same, namely: an impression made at one end of a sensory nerve exciting a corresponding motor response through a connecting motor nerve and central communication. The so-called superficial reflexes are those of the foot (dorsal flexion), and the withdrawal that results from tickling or making a sudden painful or cold or hot impression on the sole of the foot, the abdominal, etc. Every one knows how, in sleep, the foot will flex and the leg draw up when the sleeper is tickled or scratched on the sole of his foot. The reflex of the testicles or cremasteric reflex, by which the testicle is made to draw up by pinching or applying electricity to the inner side of the thigh are other skin reflexes so-called. They are organic reflexes, though not

always so termed by authors, because they belong physiologically to the organism in health like the knee, or quadriceps extensor femoris tendon reflex, as it is sometimes otherwise lengthily termed. There are many other organic reflexes which are active in health and impaired in disease.

The true organic reflexes are those which are necessary to some physiological function of the organism like those of the stomach and bowels in peristalsis and the contractions that promote the downward movement of the intestinal ingesta and excreta, or like those of the aesophagus and the closure of the epiglottis in swallowing a drink or a bolus of food, the rythmical movements of the lungs and heart, the sneezing excited by a sternutatory, the coughing of a bronchial irritation or the blinking of an irritated eye, (an *augen-blink*), a movement so rapid and brief and sure that the Germans have coined this unerring function into a most expressive phraze significant of celerity and certainty.

The rectal reflex through which defecation is performed and by which the involuntary discharges of dysentery and diarrhoea sometimes occur when the inhibitory brain centers and fibers coming down the cord from them in the brain are exhausted or spinal cord communication from the brain downward is intercepted or destroyed, as in spinal injury, coma, some states of delirium, or when the patient is in *articulo mortis* or the condition of death just following the death stroke. It is the same with the reflex controlling the seminal excretion, but the bladder reflex generally contracts the sphincters under withdrawal of the cerebral inhibitions, except when bladder distension is very great, unless there is a conjoint general convulsive condition, as in epilepsy.

The antagonizing reflexes of the sphincters and the bladder fundus, the preponderating weakness of the one over the other and the state of the brain inhibitions, explain the differing bladder phenomena of urinary retention or expulsion.

The enuresis of childhood is a weakening of bladder sphincter reflex conjoined with general nervous debility, which is irritability, which causes the bladder to contract

on its contents when it is full and expel them, while the inhibitions are off guard during profound sleep. There is also a perineal reflex which is normal.

The sacral plexus of nerves, the fifth lumbar and the first, second, third, fourth and fifth sacral nerves preside over the bladder, rectal, sexual, including the cremasteric and virile reflexes, and over the reflex of the perineum and the quivering nates that tremble when they are slapped. Thus you see this whole subject presents interesting aspects to physiologist, pathologist, and clinician. The abdominal and scapular reflexes are made possible through the dorsal nerve supply—sensory and motor—distributed to the skin and muscles of the thorax and abdomen.

The deep or tendon reflexes, the clonus and other contractions, the paradoxical contraction of Westphal, the pupillary reflexes, including the Argyle-Robertson pupil, the nerve reactions especially of degeneration under electric stimulation and the conditions and terms of disturbed sensibility will engage our attention in subsequent lectures, and by their careful study you will have food upon which you may feed to the full the best faculties of your minds, as students of medicine—those of observation or perception, retention or memory, and reflection or thought, and as you perceive and conceive the unfolding subject you will discern, as you have never done before, "how wonderful, how complicate is man" in the make-up and movements of his neural and psycho-neural mechanism.

I give you a simple schematic diagram of the reflex arc with an imaginary line of inhibitory conduction from the brain to the center of the reflex arc. I stop here purposely in order not to embarrass your understanding of the wonderful phenomenon of reflex which is in reality not quite so simple as thus far appears, though, so far as this lecture has proceeded, I have been scrupulously correct.

But there is another and very important feature to the physiology of the spinal reflexes and the cerebral too, in fact, which often has valuable pathological and diagnostic significance, and that is the fact that the spinal reflex responses to peripheral irritation are often exaggerated, sometimes very

greatly exaggerated by pathological conditions of the brain and spinal cord, as apoplexia, chorea, antero-lateral sclerosis, the late stage of the epileptic paroxysm, hysteria, neurasthenia and emotional and debilitated states of the brain, which goes to confirm the view that there are also downward conducting nerve paths from the brain which serve to intensify the spinal reflexes as well as those which serve to restrain them so that as the reflexes are said to be reinforced or exaggerated by restraining or diverting the cerebral inhibitions, they are also intensified by certain excitable states of the brain as well as of the cord. In that paradoxical disease, hysteria, so much like the sex in which it is most frequently manifest: When they are neuropathic,

“Variable as the shade
By the light quivering aspen made.”

You will find many reflex contradictions; intensification in one direction and impairment or lost reflex in another. Intense feeling in one side and lost sensation in another, just as alternating psychical states rapidly succeed one another, as shown in the weeping that succeeds laughter and *vice versa* during a paroxysm. So that we must now make another diagram in order to be perfectly plain on this subject.

The emotions which give rise to penis erections, stimulating the bulbo-cavernous or virile reflex center in the cord from the brain cortex, urinary ejaculation and defecation increased as well as resisted, by voluntary effort, are confirmatory of reinforcing influences and communications with spinal reflex centers.

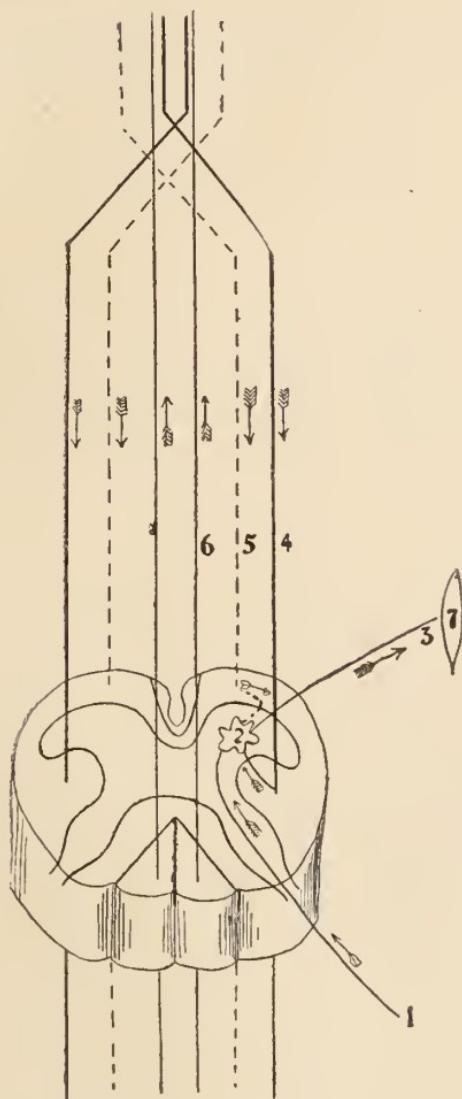


FIG. 2.—Schematic Diagram, Representing a Reflex Arc with its Inhibitory Fibre and Reinforcing Fibre [Conjectural]. 1. Fibre (afferent) for sensation to spinal cord, conveying sensory impression from periphery to motor cell (2) of anterior horn where sensation is transformed into motor impulse and conveyed by motor (efferent) nerve (3) to peripheral muscle (7).—the whole constituting a Reflex Arc. 4. Inhibitory conducting tract from brain to motor cell (2); 5. Reinforcing fibre [conjectural] from brain to motor cell (2); 6. Sensory conducting fibre to brain.

THE POLYNEURITIC PSYCHOSIS.*

(Psychic Toxæmic Cerebropathy of Korsakoff.—Polyneuritic or Panneuritic Psychosis of other Authors.)

Critical Review, by DR. G. C. FERRARI.

BEFORE proceeding to the description of that complex mass of symptoms which has, for some years under the name of *Polyneuritic Psychosis* been represented (wrongly, we consider) as a disease *per se*, we should like to premise a short history of the mode of genesis and the evolution of this conception of it. In this way we hope to explain, better perhaps than in any other, how very obscure the conception of the new disease is in the minds of those who, like Korsakoff, have given descriptions of it.

In 1887, Dr. S. Korsakoff, who has devoted much time to the study of alcoholism in Russia, and has published a volume on "Alcoholic Paralysis," which he frequently quotes, but which has never been translated into any other language, published his first work of this subject under the title of "A Disturbance of Psychic Activity in Alcoholic Paralysis and the Relation of this to Psychic Disturbances in Multiple Neuritis of Non-Alcoholic Origin." Three years after, in 1890, he issued a second book, also in Russian, under the name of "Some cases of a Special Cerebropathy in Multiple Neuritis," and, shortly afterwards, speaking for the first time in Germany, he invented the name of "Polyneuritic Psychosis," for which he soon substituted as *a posteriori fit denominatio*, the title of "Psychic Toxæmic Cerebropathy," by which he defined a special symptomatic phenomenon. He soon encountered opposition from Oppenheim, who denied abso-

* Translated from the *Revista Sperimental de Freniatria e di Medicina Legale*, by Susanna P. Boyle, M. D., C. M., Professor of Normal and Pathological Histology Ontario College for Women; Physician to Girl's Home, Toronto.

lutely the existence of such phenomena, and from Tilling and others, who wished to limit the presence of the word psychosiş to a polyneuritis of alcoholic origin only. But, as these last reminded one too much of the previous studies on alcoholism, thus tending to deprive the new disease of much of its novelty and individuality, Korsakoff devoted himself to the investigation of all cases that could in any way be made to conform to the extensive clinical scheme which he had laid down, but from which he could more or less easily exclude alcoholism. He was thus compelled to first deprecate and finally abandon altogether the neurotic phenomena and instead give all the credit to special psychic symptoms. As this specializing process progressed, however, the new syndrome naturally became eclipsed. Conscious, perhaps of the danger, some of those who followed his teachings did not agree with him on this point, but they still confused the two formulæ and indeterminate data under which Korsakoff has sheltered his physical symptoms, and they baptized as polyneuritis, every myalgia and every alcoholic paralysis, others, however entered entirely into Korsakoff's opinion, abandoned the old name and, attempting to exclude every suspicion of alcoholism, when they could not deny it, ascribed to it only a predisposing influence, whereby the ground was prepared for an infective principle which caused Korsakoff's cerebropathy to develop secondarily.

In Italy the new disease has been studied by Colella, who before proceeding with a brief *résumé* of reported cases analogous to those described for the first time by Korsakoff, gives a short history of some patients seen by him in the clinics of Charcot and Hitzig. He reports eight cases, but as we shall see later the seventh of his cases presented no trace of any mental disturbance, and the eighth, who has a typical hallucinatory alcoholic delirium had never had the slightest sign of polyneuritis as Colella shows when referring to his examinations before and after death.

And now we come to the clinical aspect; and here we shall consider more at length the psychic symptomatology and especially one phenomenon of this, either because it is the most interesting, or because, according to Korsakoff, it

is the only symptom, the existence of which is necessary and sufficient to institute a diagnosis.

This disease must be characterized by being associated with psychopathic phenomena distinctive of a more or less typical polyneuritis. The symptoms of this last are for the most part lacking, but always later, one set of symptoms predominates and masks the rest. When the polyneuritis is very conspicuous, it shows the usual symptomatology, viz.: contractures, muscular atrophy, pains, etc. The disease begins subacutely, because as it is usually secondary to some serious malady (typhoid, puerperal fever, etc.), its initial symptoms are confused with those yet remaining of the primary disease. It generally begins with vomiting, which is often very persistent and greatly weakens the patient. The invalid now begins to have a sense of insecurity when standing and very soon he is unable to walk. Paralytic phenomena supervene in the lower extremity and eventually even in the upper, limiting the movements of the fingers. Accompanying these there are pains and muscular atrophy, the electric contractility of the muscles disappears, and contractures occur. The knee reflex disappears early, but the others remain normal or are exaggerated. Sometimes the muscles of the trunk and of respiration are also paralyzed, and in these cases death very soon occurs. Such a termination is however very rare.

The psychic phenomena have a no less vague and incoherent symptomatology. In the beginning we find only a simple irritability and a diminution of the activity of the nervous system, and these are attributed to general weakness. The patient is either very capricious or extremely apathetic, and all the symptoms continue to increase in such a way as to show that we have to deal with something more than a simple irritability due to weakness. In those cases where excitement is present, it is strong and the patient has an expression of terror. He has a tremulous and indefinite look and the agitation is most marked at night.

Besides the disorders of consciousness, there is a special disturbance characterized by complete amnesia of events

that have only just occurred, while remembrances of the past are quite vivid. The amnesia takes place slowly but is very deep and endures even after the patient has been quieted. Its intensity varies, depending for the most on the general phenomena. As to the delirium, it is made up principally of pseudo-reminiscences; it is monotonous and the train of thought is easily followed.

Sometimes there occur other cerebral and medullary phenomena, viz: disturbances of speech, of deglutition, external ophthalmoplegia, nystagmus, etc.

As it may be said that this amnesia constitutes the whole disease, we shall now examine it more minutely. The patient, at first sight shows nothing abnormal; he speaks reasonably, may even converse with much spirit, but forgets almost instantaneously what has happened a moment before. Beginning a conversation, he continues it very well, but if interrupted forgets entirely of what he was speaking. When prompted he will resume his discourse, repeating almost word for word certain phrases used a moment before, as if they had now for the first time entered his mind. Notwithstanding there seem to remain some unconscious impressions, as for example, though he has never learned to recognize the doctor, he seems to intuitively understand his position. On the other hand all ideas of time, place and form appear to be entirely abolished. The patient commonly tells untruths, based for the most part on spurious reminiscences, which give or may give the impression of delirium. The fatuity to which such a condition reduces these patients is in strange contrast with the care they generally take to conceal it. On special occasions, by strength of will, they can even recover a little their power of memory, but only for a short time, and the effort leaves them extremely fatigued. From certain data we are led to believe that the memory of emotions lasts longer than that of figures. After a year, in one case, a patient began to recognize some object and to remember some events which had occurred a short time before, but he was not able to localize them, and soon began to repeat himself. However he continued to remember

certain events which had happened to him during the period of his most profound amnesia; an event occurring then came to his remembrance and he described it as it really happened, but such recollections were for the most part spontaneous, having no apparent connection with each other and presented themselves without any volition on the part of the patient. He had no idea of the order of events during his amnesic period; every re-remembered incident never again left his memory but went to make part of his conscious life and thus the dark period became full of memories; but events, words uttered in his presence, and his dreams all made the same impression on him and it was impossible for him to differentiate them. The delirium, rudimentary chiefly, which outlived the amnesia, but finally itself disappeared, was usually consequent on some attempt of the patient to re-ordinate the recollected material. This form, however, is found in only a very few cases, because the amnesia for the most part is similar to the continuous amnesia of dementia.

As to morbid anatomy, there have been but few observations made even in the rare cases in which an autopsy was possible. In one case (Giese and Pagenstecher) the cerebrum was examined microscopically and there were found only a few capillary haemorrhages, which were not considered of any special import, as the patient had been an epileptic. In the medulla there were some vacuoles in the cells of the anterior gray horn and an increase of nuclei in the parietes of the central canal. In the peripheral nerves there was a segmentary neuritis of Gombault's type, and also degeneration of some muscular fibres. In a case of Korsakoff's and Serbski's the cerebrum was not examined, the medulla, which presented a congenital malformation of the central canal, showed a discrete proliferation of the neuroglia in the columns of Goll and in the lateral columns; many peripheral nerves were degenerated and there was a colloid degeneration of the thyroid gland. Death also occurred in the eighth of Colella's cases, but in this patient there were no true polyneuritic symptoms, as we are unable to consider as such the myalgias

which were certainly not surprising in alcoholism, nor the "cyanosis and coldness of the right leg"¹² which were symptoms of incipient gangrene; and, in fact, the autopsy showed that there was an old thrombus of the right crural vein at its entrance into the iliac and a recent thrombus of the right crural, tibial and peroneal veins.

The etiology then, we affirm, must be common to this disease and to multiple neuritis. We find the causes to be the following;—

(1) Toxic causes: metallic (lead, arsenic, etc.) and non-metallic (alcohol and perhaps some subject analogous to sugar in the psychosis accompanying diabetes).

(2) Toxaemic causes, produced that is to say by a special virus of unknown nature (probably an organic or chemical product of the development of some special organism) circulating in the blood and having either been developed in the body or having entered from without; being either primary or secondary, that is to say the morbid agent causes first a certain disease, which is followed at a longer or shorter interval of time by a polyneuritis.

The pathogenesis is still very uncertain, our knowledge of it being chiefly derived by reasoning from analogy of cases of toxic paralysis. When, as often happens, alcoholism is a factor, the derivation is plain, from our knowledge of this disease in psychiatry and neurology. According to Korsakoff, however, even the alcoholic intoxication is accomplished by means of a toxin and not by alcohol itself. The latter would act by favoring the developments of leucomaines and ptomaines and facilitating the action of these on the nervous system.

Korsakoff affirms that the diagnosis is easy for any one who has had leisure to observe one of these cases. In our opinion, in the greater number of the recorded cases the examination of the symptoms was too incomplete to succeed in really proving anything. The system adopted by the observers of the new disease, of not making a differential diagnosis may be a proof of self-confidence, but on reading their clinical histories one is often reminded of poliomyelitis,

more frequently still of hysteria, and sometimes even of that mysterious acute ascending paralysis.

The prognosis of polyneuritis, when this is the prevailing feature, depends on the intensity of the general symptoms, but it is very rarely immediately fatal. Death occurs from paralysis of the respiratory muscles. In one of Colella's cases the diaphragm remained paralysed for some time after the other phenomena had disappeared.

The treatment must be prophylactic and symptomatic.

The preceding data are taken from the numerous publications which have been made, containing observations on these cases, of which we shall give here some brief statistics.

From 1887 to 1891, Dr. Korsakoff published in different journals,³ twenty-one observations, only one of which was followed by an autopsy.⁴ In three cases,⁵ only, in which he experienced the difficulty on which Charcot⁶ had insisted, of making a tendency to alcohol a requisite factor, he believed this to be the cause; the other cases followed typhoid, puerperal and diabetic affections, auto-infection from the intestine, etc. In some of these cases, however, the polyneuritic phenomena are either absent or very badly marked (but this does not greatly concern the author), and in others the mental symptoms are very rudimentary. In 1889, Winddrack⁷ published a case, which followed a puerperal parametritis. In the same year, Tilling⁸ of Riga maintained that Korsakoff's cases were merely those of a simple alcoholic neuritis, and published reports of seven cases, in only one of which the etiology was not quite clear; he had had this under his care when he had not been able to quite make a satisfactory diagnosis of multiple degenerative neuritis, then he considered it a case of Landry's paralysis and anterior poliomyelitis and he was struck by the monotony of the psychical disturbances.

In 1892, Brie⁹ published a case of non-alcoholic origin and Devie¹⁰ one due to puerperal fever; in 1893, Giese and Pagenstecker¹¹ reported another where the causes were alcoholism, tuberculosis and epilepsy. More recently Colella¹² has contributed to the subject, publishing reports of eight cases

seen in France and Germany at the clinics of Charcot and Hitzig; as has been said, we must exclude the seventh of his cases as the patient was simply an alcoholic, who had no psychical disturbance of any kind (at page 97 of his August diary he informs us that the patient was "suffering much and very dry" and adds that "he does not remember what he has said," and this was all the psychical disturbance). We must also exclude the eighth case, which showed no sign of psychical disturbance even when looked at from Korsakoff's wide point of view, nor had he any symptoms of polyneuritis.

Amongst cases found in literature, Colella cites one of Moeli's, published six years before Korsakoff studied the subject. Moeli gave to his study the more limited and just title of "Alcoholism, Psychical Disturbance, Atrophic Paralysis of the Extensors of the Thigh." Nor was Moeli¹³ the only one who had previously written on this subject: there were besides an infinitude of other authors, whom we should like to recall to memory, who have seen and described the disease now presented in a new guise.

In '82 Fischer,¹⁴ under the title of "A Special Spinal Affection of Drunkards," reported two cases of alcoholism with paretic phenomena and serious disturbances of memory—Strümpell¹⁵ in '83 (On our Knowledge of Multiple Degenerative Neuritis) gave the usual symptom picture without laying too much stress on amnesic phenomena and in the conclusion remarks: "The psychical alteration then really bears no direct relation to the other phenomena, but is due to chronic alcoholism."—Lowenfield¹⁶ in '87 published two cases (On Spinal Paralysis with Ataxia), in only one of which there was mention of special amnesia and it treated of an alcoholic: Like Fischer he did not believe it was a question of polyneuritis—Bernhardt¹⁷ (Multiple Neuritis of Alcoholics) gives the usual clinical history—result, cure.—Contemporaneously Oppenheim (Contribution to the Pathology of Multiple Neuritis and Alcoholic Paralysis) communicates six cases. In only the first of these cases was there loss of memory and in summing up he says, "It is easily understood, and the involving of the mind in many of these cases amply proves it, that, notwithstanding the multiple neuritis, part of the symptoms are of central

origin."—Müller¹⁸ (A Case of Multiple Neuritis) speaks of a drunkard with amnesia and *a propos* of this remarks the frequency of psychopathic symptoms in cases of neuritis; he also cites Jaffroy (*Arch. de Physiol.*, 1882) and Greinger (*Edinburgh Med. Jour.*, 1881), each of whom saw a case of polyneuritis in which there was "well-marked dementia"—Lilienfield¹⁹ (On the Study of Multiple Neuritis) speaking of an alcoholic, 26 years of age, reports the usual symptoms, and in concluding says, "The psychic phenomena must not then be regarded as concomitant symptoms, but are to be considered as an integral part of the disease."—R. Shulz²⁰ (Contribution to the Multiple Neuritis of Drunkards) reports a case in which amnesia was not marked. The psychic symptoms were very slight in a case of Witkowski's²¹ (On Clinical Study of Alcoholic Multiple Neuritis) and in a case of Eichorst's²² with a similar title. Charcot also notes this.²³

The literature of this subject embraces still other works treating of polyneuritis in which was lacking any and every psychic symptom, and these have been published by Eichorst, Oppenheim, Thomas, Lowenfield, Laquer, Eisenlohr, Rosenheim, Eilau, Senator and Cornelius. Gowers in the latest edition of his splendid *Treatise on Nervous Disease*, hardly mentions a psychic phenomena which may accompany alcoholism, in the long chapter which he devotes to multiple neuritis.

We should like to mention here a curious case presented by Neisser, in opening a discussion of the German Psychiatric Society on Nov. 23th, 1889. The case was that of a woman, sixty-nine years of age, who, convalescing from a severe psychosis, showed an amnesia so profound and general as to resemble that described by Korsakoff. Ten years before, after another illness, she had presented the same phenomenon.

Summing up and tabulating the data we have collected, we find that the psychopathic form consists chiefly of an amnesia, which may be found in

- (1) Cases of multiple neuritis due to alcoholism.
- (2) Cases of multiple neuritis due to other causes.
- (3) Cases of alcoholism without neurotic phenomena.

(4) Cases in which the etiological condition of multiple neuritis are present without thus having manifested itself.

(5) After an acute psychosis.

Thus this curious psychosis is not related to either simple or multiple neuritis, nor to alcoholism, because any one of these may be absent in a given case. In all there are reported fifteen or twenty cases in which it complicated an organic intoxication not accompanied by a neuritis of any kind; but is this of any value when one considers the enormous number of intoxications which do not give rise to psychic disturbances?

Truly, it does not appear to be so, and we are forced to conclude that its course is too transitory to be accepted as a true psychosis due to polyneuritis, especially when we consider with Colella, that little or no account is taken of alcoholism as a factor in the etiology.

The cases we last cited here appear to place the matter in a proper light, speaking of a simple occasional concomitant where the psychic phenomena accompany those due to alcoholic polyneuritis.

This is made still more obvious when we examine more minutely the minds of such patients; we regard a physical examination as less important, both, because, in the cases cited, a polyneuritis of non-alcoholic origin was very rare, and because we have already showed how lightly a physical examination is valued by the first and most authoritative observer of these symptoms. According to Korsakoff's last idea the psychosis may present itself:

First.—In the form of weak irritability of the psychic sphere.

Second.—In the form of confusion with very characteristic delusions as to place, space and situation.

Third.—In the form of acute amnesia, especially in regard to recent events, while memories of past occurrences may be quite vivid.

The three types are usually mixed and we have already made reference to the difficulty of differentiating between this and other better-known diseases; the best description of it has been given as usual by Korsakoff in the *Revue*

Philosophique, in regard to different patients, for the most part people of talent (artists, advocates, etc.), and all alcoholics, we have above summed the phenomena which these, singly, presented; certainly we have not found any two patients who at all resemble each other psychically with the exception of the case which formed the subject of Colella's first observation, to illustrate which he uses the words adopted by Korsakoff in the above-quoted article when the latter is describing the psychical state of his own patients. In fact at page 511, Korsakoff writes: "bien que le malade n'ait aucune conscience qu'il garde les traces des impression qu'il reçoit, etc.," which Colella translates, so to speak in his own case "questo infermo il quale non ha alcuna coscienza cle egli guarda le traces delle impressioni che riceve, etc." Of the other cases each has its peculiar characteristics, but this very lack of any common feature is what makes the clinical picture so uncertain, so that after having read a clinical history one does not know what really constitutes the disease.

What, however, is always present in the cases called *polyneuritic psychoses*, in those above cited, and in Korsakoff's *toxæmic cerebroopathy*, is amnesia which is not, however, in any case so conspicuous or complete as in alcoholics; it has been regarded as analogous to that found by Charcot in hysteria and called by him "anterograde," and by Sollier "anterograde of conservation;" Colella entitles it "amnesia di evocazione." He indeed believes with Korsakoff that owing to a special lesion, which we may be able to localize in the system of associated fibres, we have an isolated amnesia, sometimes independent of any other intellectual disturbance, due to the loss of power to evoke remembrances; these however are still preserved in the consciousness and will re-awaken when recovery takes place, returning slowly as the conscious personality gradually reconstitutes itself. The amnesia follows the rules laid down by Ribot of regression and reconstitution of memories.

If however we remember the observation so often repeated by Korsakoff, that the judgment, the nicety of perception and the *ego* of the patient are never altered, we

are led to attribute its true value to an expression used by Colella's first patient "these small acts of forgetfulness depend, I believe, in the lack of interest I generally have in these things," which according to our view shows clearly that we have to deal with a disease more perhaps of attention than of memory. It is, so to speak, an amnesia dependent on abulia. To us it seems that the amnesia is based chiefly on the want of psychological assimilation of ideas. In other words, these patients have no consciousness of memories, which they really possess, but the memories nevertheless exist in their minds and some of them may be recalled by an exercise of will-power, as in one of Korsakoff's cases, or they may be awakened by the mysterious agency of unconscious cerebration or by the disappearance of the condition of intoxication of the organism.

An idea which appears here and there in the works mentioned without ever being clearly expressed, points to the possibility of their being present a special morbid condition in the peripheral nervous tubes (nerves) and also in the central ones (system of associated fibres) due to an elective power of the infected blood; but, until the identity of these elements has been better demonstrated, until we have succeeded in showing by what means are accomplished the associations of conscious memory, and whether the same serve for unconscious memory; prudence dictates that we confine ourselves to studying and recognizing as well as possible the mental phenomena and the laws governing these, rather than making a hypothesis which has almost nothing to justify it on the nervous actions which correspond to these.

Searching, instead, in psychology for some mode of interpretation we find in the psychic process through which these patients pass, that one link of the psychologic chain is wanting, viz., that called by Janet "psychologic assimilation of ideas." The personal conception of ideas is thus, then lacking in such patients, through an insufficiency of attention. The events which occur do not enter and form part of their personality, and they absolutely cannot evoke a memory which really exists in them, but which they are

not conscious of possessing on account of the disconnected condition of the mind at the moment when the memory was required.

We have therefore, in other words, a dissociation between the perceptive and apperceptive processes. Ideas are perceived, and may even provoke a reflex reaction, automatic or primitive as Ribot would term it (cry of pain, which is denied a moment afterwards, immediate response to a question, etc.), but an impression never passed beyond the threshold of the consciousness and falls only casually within their field of vision (apperception of Wundt): however nothing is lost and the fleeting image has not only made its impression on the central organ, but has become organized, only statically however, not dynamically. In this way only, can be explained the special form of delirium, based on associative, not apperceptive combinations, of these patients, the relatively long duration of it, and the mode of reviving their memories, when after their recovery they begin to change into dynamic, the old static associations.

Every image perceived may always be apperceived, but only when the person prepares himself by a certain power of attention and it is exactly this power which is lacking in the people in question.

If then we consider that attention is only a manifestation of will in intellectual processes, as Wundt has well demonstrated and also, more recently, Bastian, and if we remember Kraepelin's demonstration that all nerve poisons act chiefly on the will, and through this on the attention we have, besides a strong support for our interpretation of the production of Korsakoff's psychic cerebropathy, a guide showing to what, in effect, we have the new syndrome reduced.

We have perhaps taken a little too much time in the exposition of our mode of interpretation, but it seems to us that it is worth the trouble to demonstrate that the memory either does not enter into at all, or at least plays a very subordinate part in this word disturbance. Thus disappears the *raison d'être* of the formation of a new disease, the history of which was founded on a collection of a few

cases in which the blood, altered by alcohol or by a general intoxication has given rise by a mechanism common to many intoxications to a psychic condition, which may also be present, as we have seen as the sequel or residue of an acute mental disease.

We shall not waste words in demonstrating the impropriety of the name "*polyneuritic psychosis*," which has no reason for existence, as logic teaches that a thing cannot at the same time be and not be. Neither do we consider proper the new name proposed by Korsakoff, and this objection is urged not from a pathological point of view, but for a still more radical reason, viz., because the cases he quotes are so few in comparison with all those in which no sign reveals that a blood altered in composition circulates in a nervous system which we know from other data is not in a state of stable equilibrium.

We do not in the least deny the fact, and on the contrary, we believe it adds support to our position, that we may, rather than we must, have a special alteration of the psyche owing simply to toxæmia, because it is mathematically certain that one factor varying, the result must also change, but we believe we have authority for denying that the cases reported have a peculiar and characteristic physiognomy.

And we further seriously affirm that hasty judgments, if indeed they do not succeed in destroying the good sense of those who know how to weigh arguments and exclude useless facts, always obstruct in some way the path of science, discrediting by insufficient observation the immense value of the new ways in which the young neuropathology faithfully walks.

1 Colella—*La psicosi polyneuritica*—Napoli, 1894.

2 Page 115.

3 *Allg. Zeitschr. f Psych.* Vol. 46, No. 4.—*Arch. f Psych.* Vol. XXI, No. 3, 1890—*Allg. Zeitschr. f Psychol.* Vol. 47, 1891.

4 *Arch. f Psych.*, Vol. XXIII, No. 1, 1892.

5 *Revue philosophique Ann. XIV*, No. 11, 1889.

6 "Lecons du Nardi a la Salpetriere"—Paris, 1890, pp. 388.

7 *Medizinskoje Obenpenije*, No. 19, quoted by Korsakoff.

8 *Allg. Zeitschr. f Psych.*, Vol. 46, No. 3.

9 *Allg. Zeitschr. f Psych.*, Vol. 48, No. 1.

10 *Province Medicale*, No. 9 and 10, 1892

- 11 *Arch. f. Psych.*, Vol. XXV, 1.
- 12 Loc. cit.
- 13 Charite Annalen Ann. VII, 1883
- 14 *Arch. f. Psych.*, Vol. XIII.
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PRIMARY HAEMATOMYELIA TRAUMATIC AND NON-TRAUMATIC.

A GENERAL VIEW OF THE SUBJECT.

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The rarity of primary hemorrhage into the spinal cord is noticed by all competent authority, and its existence is even denied by some whose opinions have always commanded the most pronounced attention. However, the general accepted opinion of the great bulk of authors is, that hemorrhage into the cord in its primary form can and does exist. More recent views upon the subject seem to tend in the direction that the rarity of hemorrhages in the primary form into the substance of the cord are not as infrequent as they were formerly supposed. If the general proposition of Charcot and Hayem be correct, that softening of the cord must always precede the hemorrhage, then it would be naturally inferred that primary haematomyelia is an impossibility. It is stated that equal force, however, comes from the assertion "that we may be unable, even with a microscopical examination to settle the question, whether we have to deal with a primary softening and a secondary hemorrhage or primary hemorrhage and secondary softening," *

Some writers upon the subject aver that in the diagnosis of hemorrhage into the substance of the cord is not entirely free from reasonable doubt, though in some instances it is reasonable to suppose, that in those particular cases, where, after the injury the onset of the disease is imme-

diate, that the diagnosis can be made. Admitted that there is great difficulty in making a differential diagnosis between hemorrhagic, myelitis and hemorrhage into the spinal meninges. It is, of course, well-known that hemorrhage of the cord may be associated with myelitis with syringomyelia, etc. Again, as stated by Gower's, minute hemorrhages are often found after death from diseases which interfere with the respiration and causes venous congestion, they being particularly frequent in cases which cause functional excitement of the cord, as in the case of severe convulsions and tetanus. These are secondary hemorrhages.

Even in cases where post-mortems are made, clouded conditions not infrequently enshroud the proper elucidation and determination of existing lesions. Certain it is that the diversity and lack of uniformity of these opinions in this trouble are naturally justifiable from the many adverse elements surrounding it. It will not be out of place to quote a few opinions regarding this subject by various writers, whose views are accepted as worthy of cognizance and belief. Gowers maintains "that hemorrhage into the spinal cord sufficient to cause symptoms," is a very rare disease, and it is even more rare than is suggested by the cases now and then recorded as such." * * * "It is possible that many cases of secondary myelitic hemorrhage have been regarded and described as primary, and it is possible that a few cases of primary hemorrhage have been regarded as secondary."

"One writer goes so far as to deny the occurrence of primary non-traumatic hemorrhage, but such an exclusive view is unwarranted. It is certain, however, that the history of primary hemorrhage has been very largely written from uncertain data, and will need extensive revision when a sufficient number of exact observations have accumulated." He asserts, "that of the immediate causes trauma is the most frequent—over exertion, exposure to cold in rare cases, chronic alcoholism have been thought predisposing." In one case, he mentions, where an extensive hemorrhage into the gray substance at the top of the lumbar enlargement resulted from coitus four times repeated, the symptoms

commencing suddenly during the fourth act. Suddenness of the onset is characteristic of the disease. Pain commonly accompanies the sudden palsy and may be felt in the spine or in the sacrum, round the trunk and at the front of the thorax. He thinks it highly probable that when there is initial, medial or bilateral pain, the hemorrhage must occur in the central region of the gray matter, from one of the commissural or anastomotic arteries. When the hemorrhage is in the cervical region all the limbs are powerless, one arm is affected before the other." Occasionally symptoms of ascending or descending myelitis may come on. The former may cause death by interfering with the muscles of respiration."

Hirt asserts that while primary hemorrhage from cerebral vessels is one of the most common causes of lesion to the brain, spontaneous hemorrhages from the spinal arteries are exceedingly rare, and indeed, it seems hardly possible, that a hemorrhage could take place into the substance of the cord so firmly held together as it is by the tough pia mater, without previous existence of alteration in its consistence. He maintains that the anatomical condition of the arteries renders the blood pressure less before it reaches the cord. Both he and Gowers note the absence of miliary aneurisms in the spinal cord, while in the brain they are the most frequent cause of hemorrhage. He believes that primary hemorrhages do occur at various ages and from various causes, that its inception is always sudden. Osler notes the fact that the existence of primary hemorrhages into the cord has been denied, says that a great majority of authors admit the existence of the primary form. Forty-two cases are on record mentioned by Hayem and Berkeley. Extreme suddenness marks the onset of extravasation of blood into the gray matter. Krafft-Ebing,* in reporting three cases of primary haematomyelia confirms Leyden's statement concerning the rarity of this affection as recorded in literature, by stating that of 245 organic diseases of the cord, which he has observed, in only three cases was this diagnosis made during life or on autopsy. The diagnosis in

* Birdsall, *loco citato*, 1892.

his two cases rested upon the sudden appearance of severe pain, paralysis and anesthesia. The subsequent disappearance of much of sensory and motor trouble which depended upon shock and the detention of certain disturbance of function indicated focal destruction.

Sharkey* reports a case of primary hemorrhage into the spinal cord with an autopsy. A boy, aged 13, fell while skating, he walked home apparently unhurt. Felt pain in the shoulder and abdomen and after two hours was unable to walk; when admitted to the Hospital had pain in the abdomen and legs, a pulse of 144, temperature 101 1-10, retention of the urine, complete paralysis of the legs with impairment of sensation up as far as the fourth or fifth dorsal spine. Patient died after eight days of pneumonia. No injury to back or spine or its membranes was found at the autopsy. A section was made into the spinal cord and extravasation of blood was found occupying nearly all the transverse extent of the cord. Hemorrhage seemed to extend to the upper cervical region and as far as the mid-dorsal region. Microscopic examination revealed that the hemorrhage was the only pathological condition present in the cord, there being no sign of inflammation or other disease.

Ellis, Boinet, Diller, Siemen, Nichols and Hoch all report cases, but are not substantiated by post mortem verification.

J. Kindred, of Harrisburg, Pa.,† describes a case of spinal hemorrhage, which is noteworthy. It occurred in a patient without any perceptible cause, a male aged 59 years, in previous good health, and no preliminary symptoms were manifest. The symptoms were at the highest state of development three hours after the occurrence of the attack. Paralysis and anesthesia, below the fifth dorsal vertebrae, girdle sensation around the body proceeded by fugitive pains, patient dying six and a half hours after the beginning of the attack. Post mortem examination revealed a blood clot about the size of an almond in the gray sub-

* Birdsall, *loco citato.*

† H. Obersteiner, *loco citato.*

stance below the level of the fourth upper vertebrae. Softening had extended in the neighboring parts. Sudden death no doubt occurred because of implication of the Phrenic centre by a gradual ascention of the hemorrhage, third and fourth segment. (The fourth spinal cervical vertebra is directly in association with the fifth cervical segment.)

Diller* also reports a case of purely idopathic hemorrhage by a gradual ascention hemorrhage occurring in a male, aged 51 years. It is uncertain in this case, and one mentioned by Fortin of Rouen, France. Recovery was complete in both cases, and it is not proven that in either one of these cases that primary intramedullary hemorrhage involved the cord.

Minor,† of Moscow, considers at length the subject of haematomyelia; asserting that a close relation exists between central haematomyelia and syringomyelia. He asserts that following spinal trauma, central glioma and syringomyelia have been developed and makes the assertion that if spinal symptoms occur immediately after trauma, hemorrhage of the spinal cord must be suspected. In four cases in which Minor found resulting from trauma many symptoms resembled those occurring in syringomyelia. For instance, the characteristic dissociation of sensibility. As the patients in question are still living, the diagnosis has not been confirmed. He reports a fifth case where death occurred from traumatic haematomyelia, autopsy revealed tubular hemorrhage throughout the entire gray matter of the spinal cord.

Raymond, of Paris,‡ reports a case where a girl was operated upon for caries of the cervical vertebrae. Patient died 15 hours after the operation. Post mortem showed haematomyelia of the lower cervical cord. This in Raymond's opinion had existed for some time before, and probably had been increased by the operation.

Manly§ reports more than 70 cases of trauma of the spinal vertebrae and 14 autopsies. He states that in 642 cases of severe injuries of the vertebral column, that he did

* *Ibid*

† H. Obersteiner, Universal Annual, Sajous, 1894.

‡ *Ibid.*

§ *Ibid.*

not find a single case of primary uncomplicated hemorrhage into the medullary substance, but a goodly number of extra-thecal extravasations of blood in the vertebral walls are recorded. Manly emphasizes the fact that the medullary substance of the spinal cord is very slightly vascular and demonstrated this by penetrating directly into the spinal cord of a dog with a needle, and makes the assertion that no true hemorrhage occurred, and draws the inference that a direct primary hemorrhage of the medulla very seldom occurs as a result of trauma.

Minor,* of Moscow, mentions three new cases in which he suspected spinal hemorrhage, although in the third case there had been no trauma. Stembo, of Wilna, and Shiwege, of Moscow, quote two cases of traumatic hæmatomyelia, both Minor and Stembo mention the fact that the symptoms may closely resemble those of syringomyelia.

It will not be out of place at this juncture to refer to surgical writers upon this subject. It is hardly necessary to quote at length from more than a few of the most marked writers upon the subject. The American Text Book of Surgery says of intra-medullary hemorrhage of the cord: "The onset is sudden, there is a history of traumatism or of disease associated with profound blood changes. The symptoms are bilateral, there is pain in the back with disappearance of the reflexes connected with the affected segments, spasms, rigidity and paralysis come on rapidly, as does also the girdle symptoms. Bed-sores, incontinence of feces and retention of urine develop very early in the case, which runs a rapid course and is often fatal. Hemorrhage into the substance of the cord is nearly always the result of forced flexion and occurs naturally in the region which fracture by indirect violence is most common. Sometimes the similarity of origin is shown by their occurring together, but independent of each other. It is possible, however, that it may be caused by direct violence, also. The hemorrhage nearly always lies in the gray substance of the cord, because this is the softest and the most vas-

* Obersteiner, Sajous Annual, 1895.

cular part, and it may occupy an indefinite length. The effect is immediate, becoming intensified later as the hemorrhage extends. Motion and sensation are lost over a corresponding area. Reflex action is suspended for a time, but rarely is so completely as when the cord is crushed and then later on the circulation around the injured area becomes more active. Hyperesthesia sets in: motor disturbances are rare. The extravasated blood may be in great measure absorbed, leaving a certain degree of anesthesia with paralysis, or spastic rigidity of the muscles corresponding to the part of the cord that has been destroyed; or, on the other hand, red softening or ascending myelitis may follow, the paralysis extends higher, bed-sores and cystitis set in and if the injury is in the cervical region, phenomenal temperatures, just as when there is a fracture." (Moullin.)

Thorburn, in his work on "Surgery of the Spinal Cord" is struck by the relative large number of cases of hemorrhage within the vertebral canal unaccompanied by any evidence of injury. He likewise notes the comparative neglect of hæmatomyelia as a result of injury to the spine, owing to their not being verified by post mortem examination, and seems to think that they are not nearly so fatal as fractures and dislocations, and believes that their pathology is not generally recognized. In 15 cases of fracture and dislocation which he has treated, all but one was fatal; whereas in six cases of hemorrhage, only two died; and he states the only possible means of diagnosis is that all the symptoms may be due to a single focus of injury, but even if not demonstrable, the symptoms are allied. He divides hemorrhage into the gray matter of the cord into "destroying" and "compression" lesions; the former are permanent, the latter more or less temporary. The result of the "destroying" lesion is atropic paralysis. The compressing lesion may produce more or less complete paralysis and anesthesia, retention of urine and feces, which, as a rule, soon subside, leaving only some spastic symptoms in the lower limbs. He concluded with the following: "The region in which hæmatomyelia is found to occur; also favors this view. In all the above cases it was located in a small area, limited

by the region of origin of the four lower cervical and the first dorsal nerves, a region corresponding to the body of the fourth, fifth and sixth cervical vertebrae. Above or below this section of the cord, I have not met with a single instance of traumatic haematomyelia. A fact, totally unaccountable on the concussion theory. This is, however, the summit of the arch formed by the cervical curve, and is therefore the region in which an acute bend of the neck would make itself mainly felt, especially if the effects of such a bend were spread over several vertebrae, straining somewhat the articulations of each, without giving rise to a dislocation."

Dr. Ira Van Gieson read before the New York Neurological Society, a paper entitled "Haemorrhagic Necrosis of the Spinal Cord," presenting points of more than ordinary interest, and calling attention to what seem to him to be an explanation of the nature and origin of certain long slender columns of necrosis in the spinal cord, found in cases of acute myelitis, and which were at a considerable distance from the myelic focus, and were, in his opinion, caused by hemorrhage.

The New York Medical Journal says: "The author then gave the history of two cases of traumatic spinal cord hemorrhage, which had recently come under his observation, and showed the close relationship which they bore to the production of these long columns of necrosis, or partly necrotic canals in the spinal cord, which were thus far known as perforating necrosis. In both of these cases there had been violent trauma, which fractured the spinal canal and produced a crushing bruise, with disintegration of one or more segments. Both the patients had died within forty-eight hours after the accident, thus allowing the lesions to be studied before the development of any extensive myelitis or necrosis. In the first case the lesion had consisted of a disintegration of the cord at the eighth cervical segment and hemorrhage in the two segments above and below this show especially on the left side of the cord. In the second case there had been a fracture of the eighth cervical vertebra, with a crushing bruise of the first and

second dorsal segments of the cord. Columnar hemorrhages were found extending upward and downward from the crushed segments.

In conclusion, Dr. Van Gieson regarded the condition of perforating necrosis as a distinct and individual lesion of the cord due to a definite series of changes, beginning with hemorrhage. To indicate this condition, and to distinguish it from other spinal lesions, he suggested the name of haematomyeloporus.

Having thus far quoted from many of the prominent authorities and endeavoring to make the inquiry still more extended, the following letter was written and sent to the most prominent Specialists of Nervous Diseases in the United States, for the purpose of getting opinions concerning haematomyelia:

DEAR DOCTOR:—Being desirous of accumulating evidence as regards hemorrhage within the cord—I do not refer to extra-dural hemorrhage, but to hemorrhage within the substance of the cord itself—will you please answer the following questions:

No. 1.—At what period does hemorrhage within the cord make itself manifest, the earliest possible period, and the remotest possible period in which you have observed the symptoms to manifest themselves?

No. 2.—What were its causes?

No. 3.—What number of cases have you seen and treated? Are they frequent or infrequent?

No. 4.—What is the prognosis?

To the foregoing questions, answers were received from the following prominent neurologists: Drs. Chas. L. Dana, New York; Jas. H. Lloyd, Phil.; Landon Carter Gray, N. Y.; Phillip Coombs Knapp, Boston; S. Weir Mitchell, Phil.; H. C. Wood, Phil.; B. Sachs, N. Y.; Jas. G. Kiernan, Chicago; J. T. Eskridge, Denver, Colo.; F. Peterson, N. Y.; G. L. Webber, Boston; Wm. C. Krauss, Buffalo, N. Y.; H. M. Lyman, Chicago; C. H. Brown, New York; Howell T. Pershing, Denver; L. Bremer, St. Louis; M. Allen Starr, New York; H. C. Shaw, Brooklyn, N. Y.; Henry Hun, Albany, N. Y.; David Inglis, Detroit, Mich.; J. K. Bauduy, St. Louis; S. B. Clevenger, Chicago, Ill.; C. H. Hughes, St. Louis; Isaac Ott, Easton, Pa.; G. H. McBride, Wauwatosa, Wis.; F. R. Fry, St. Louis; Wharton Sinkler, Phil.; C. G. Chaddock, St. Louis.

To question No. 1, the following answers were made:

"If there is hemorrhage into the cord the symptoms must manifest themselves with unusual suddenness. Complete paralysis in a few minutes, or at the utmost in an hour is the usual result."—SACHS.

"I have had several such cases, all in adults from 40 to 60 years of age. The symptom came on instantaneously."—PETERSON.

"Hæmatomyelia may occur at any period of life. I have seen it in the syphilitic new born. It has not occurred in my observation in the aged, that is, in as far as that it was severe enough to get any symptoms. It occurs most frequently in the vigorous and middle ages of life."—BROWN.

"Immediately after an injury. Occasionally spontaneously from diseased arteries. No statistics to answer."—STARR.

"I have had but one case, which occurred in a man about 40 years of age."—INGLIS.

"In an enormous experience of 31 years, I have observed only one case, which proved fatal. The symptoms were ushered in abruptly and instantaneously."—BAUDUY.

"Any period depending upon nature of disease involving the arteries. Cord vessels participate in all dangers common to vascular system of the body in general."—CLEVENGER.

"Never saw a case of sudden spontaneous intra-dural cord hemorrhage. Have seen some dissolution hemorrhage. Have seen but one case of traumatic hemorrhage."—HUGHES.

"Hemorrhage into the substance of the cord (non-traumatic) is very rare. Charcot taught that primary hemorrhage into the cord did not occur. Hayem (thesis, Paris) promulgated same idea. Hutin was first to describe primary hemorrhage. Other writers have been Olivier, Tevier, Hayem. The most important case of primary (non-traumatic) hemorrhage into cord is Kindred's (*Med. News*, Feb. 14, 1892). Sharkey (*London Lancet*, May 23rd, '91), published history of a traumatic case."—LLOYD.

"In the cases coming under my observation the symptoms have followed immediately upon receipt of the injury which caused it."—ESKRIDGE.

"Age. There are cases on record at 4 and 7 years of age, and also severe at an advanced age, where the majority of cases are between 20 and 40. The condition cannot be diagnosticated, unless symptoms appear immediately after alleged injury. In my cases symptoms appeared immediately, one aged 19 and the other 32 years."—FRY.

"At the outset, while it may be admitted that spinal hemorrhage is much more rare than cerebral hemorrhages, and rarer even than published reports would justify, because of the mistakes made in pathology, through ignoring artifices produced by manipulation, still cases where I have been satisfied of actual hæmatomyelia have occurred in my experience to the

number of 20. The period at which the disorder manifested itself, not to be determined by the symptoms. Some cases in which the spinal condition was primary did not differ from cases of transverse ascending myelitis, locomotor ataxia or spinal neurasthenia. The earliest period in my experience was one week. The man was a worker in compressed air, and within a week after taking ill with obscure febrile symptoms manifested to be acute myelitis followed by typhomania, from which he died. The autopsy revealed what appeared to be primary haematomyelia and the cerebral inflammation was obviously of later occurrence.”—KIERNAN.

In answer to question No. 2, what were its causes, we quote the following:

“The most important cause of intra-cord hemorrhage is trauma. These traumatic cases are not so exceedingly rare, the trauma usually causes also compression, tearing, or other injury to the cord tissue. The grave symptoms do not always occur at once. In one case of my own, in which a man was knocked off a cart, the patient was refused admission into one Hospital, because he seemed to be only drunk. He died within a few days with extensive cerebral hemorrhage.”—LLOYD.

“Have seen but one case of traumatic hemorrhage, as indicated, viz., violence.”—HUGHES.

“Syphilis, arterio-sclerosis, rheumatism, traumatism, congenital defects, such as purpura, or any of the multitude of diseases setting up primary or secondary degeneration.”—CLEVINGER.

“My case occurred in an adult, answered above. traumatic.”—BAUDUY.

“Traumatism (thrown from a horse), falling off of a fence backwards, two gun-shot wounds, the bullet striking the vertebræ, but not entering the canal of the spine or injuring the cord by splinters of bone. The medullary hemorrhage seemed purely the result of concussion.”—ESKRIDGE.

“Result of a fall backwards from a wagon.”—INGLIS.

“Injuries, diseased arteries.”—STARR.

“Trauma, disease of the vertebræ, pernicious anaemia, tuberculosis, (convulsion over coitus), etc.—doubtful.”—BROWN.

“In some cases the causes cannot be made out. In the majority of instances it is due to traumatism.”—SACHS.

“Usually unknown, though undoubtedly the same causes as produce fragility of vessels in the brain. In one case a fall produced it. In one case, recorded by Henshen, a long hemorrhage into the cord at autopsy after arsenical poisoning.”—PETERSON.

“In the case of spinal hemorrhage, produced by a worker in compressed air, there was decidedly rheumatic symptoms. In another case, a news-boy was knocked down by a fire-engine and bruised severely, subsequently he became a cripple in gait, and a rapidly progressing disorder, resemblin;

locomotor ataxia made its appearance. The arthropathies of the disease seem to interfere with the gait, more than actual loss of motor power. A mental disorder temporary at first, passed into paretic dementia from which the patient died. The autopsy revealed recent changes in the brain and both syringomyelia and haematomyelia; the first being clearly due to absorption of the effusion. The causes, in the majority of cases coming under my observation were constitutional, chief pre-existing mental states like paretic dementia. In a majority of cases, occupation, compressed air-workers, severe muscular exertion and exceptionally sudden exposure to cold or traumatisms were the causes. In one case menstrual suppression was alleged as a cause, but I am inclined to believe it an effect. The predisposing elements are chief etiological factor. Syphilis, gouty diathesis, paretic dementia, lead poisoning, atheromatous tendencies all play a part. The direct influence of traumatism is much less frequent than one would suspect."—KIERNAN.

"In one case a gun-shot wound. An operation and examination left little doubt that the paraplegia, etc., was caused by an intra-mural hemorrhage in the lower dorsal cord. In the other case, excessive coitus, viz., five times in one night which was immediately followed by severe pains in the lower dorsal region and a rapidly developing paraplegia with an absence of symptoms of an extensive myelitis."—FRY.

To question No. 3, namely, are these hemorrhages frequent or infrequent?—the following answers were given:

"I cannot recall exactly the number, as I have said already the traumatic cases, in my judgement, are not so exceedingly rare. They are often described as "myelitis," whereas in fact the process is one of softening from bruising of and minute hemorrhage into the tissues of the cord. See Van Gieson's paper in the *N. Y. Med. Journal*, June 2, '94."—LLOYD.

"I have seen four or five cases. They are very infrequent."

—PETERSON.

"I have made the diagnosis in only three cases. They are of extreme rarity. Many of the cases in which the diagnosis of hemorrhage is made, are unquestionably cases of acute myelitis, which also develops with considerable suddenness."—SACHS.

"I have seen a number—three rare cases. I am positive of. The clinical picture is rare. The disease without positive differential symptoms not so."—BROWN.

"Infrequent, uncertain, chiefly Hospital cases, of which I have no history to refer."—STARR.

"Infrequent—a single case."—INGLIS.

"Primary hemorrhage into the spinal cord is a very rare disease. It is even more rare than is supposed by the cases now and then recorded as such. Hayem goes so far as to deny the occurrence of primary non-traumatic hemorrhage, but such an exclusive view is unwarranted. It is certain,

however, that the history of primary hemorrhage has been largely written from uncertain data."—BAUDUY.

"No record kept, except in incidents of other ailments. Frequent in disorders involving the cord."—CLEVENGER.

"Infrequently, as you may infer, from my previous statement in my personal experience."—HUGHES.

"Four cases, they are infrequent."—ESKRIDGE.

"Only two cases. Have seen several doubtful diagnoses. They are very infrequent, that is, to say, cases of primary hemorrhage. Cases secondary to other diseases are more frequent, but even these are infrequent, where the hemorrhage is large enough to produce symptoms."—FRY.

"As will be seen under the head of question No. 2, I state there that I have had an actual experience in cases of Hæmatomyelia to the number of 20, and that the direct influence of traumatism is much less frequent than one would suspect. The insane will oftener have the lesion than the sane, and this is the explanation for my comparatively great number."—KIERNAN.

The following were in answer to the fourth question; namely, what is the Prognosis?

"Unfavorable, there may be a slight improvement, but never so much as in cerebral hemorrhage."—PETERSON.

"The prognosis, even in the cases where the predisposing factor is not of evil effect, is bad as to ultimate recovery. These cases are, however, only diagnosed on autopsy, the lesion, however, is such a gross one that it would be readily detected. As Dr. Van Gieson has shown, there are wonderful spinal lesions produced *post-mortem* by non-expert manipulation."—KIERNAN.

"Bad. Recovery never complete in any case, that can be diagnosed with any certainty. Many of the cases fatal."—FRY.

"Unfavorable."—HUGHES.

"Depends on extent and location of hemorrhage. Erb, Lydon, Gowers, Ross and other neurologists cover the ground more fully."—CLEVENGER.

"My cases were all fatal. Autopsies were obtained."—ESKRIDGE.

"Most unfavorable, frequently fatal."—BAUDUY.

"The prognosis for recovery is bad. If the patients live, they are likely to be crippled for life. See my paper on "Traumatic Affections of the Cerebral Regions of the Spinal Cord Simulating Syringomyelia." Another paper is by Minor ("Centrale Hæmatomyelia," *Arch. of Psyche. Bul.*, 1892, xxiv. '92.")—LLOYD.

"This man made a partial recovery, but secondary degeneration left him permanently damaged"—INGLIS.

"Bad as to entire recovery."—STARR.

"Good if slight, bad if at all diffused, especially as to complete recovery."—BROWN.

"The prognosis will depend upon the extent of the destruction of the hemorrhage. If the hemorrhage is a slight one, it can be absorbed and recovery may set in. If much tissue has been destroyed the prognosis is unfavorable as regards recovery of the use of the parts. As regards life, the prognosis will vary according to the position and intensity of the lesion. Cervical hemorrhages are much more grave than those of the dorsal or lumbar regions, but excessive hemorrhage anywhere in the cord may lead to death from secondary complications, such as cystitis and pyelitis, etc."—SACHS.

In addition to the various question herein propounded, the following Neurologists reply under general assertional principles:

"The form of hemorrhage regarding which you wish information, is one which is almost purely medical, as I have had no autopsies and know of none in this city, which show that injury to the spine or body cause hemorrhage into the substance of the spinal cord alone, in previously healthy case. Spontaneous medullary hemorrhages are in my opinion not so very rare, and I have reported one of them recently."—DANA.

"Have seen a number of extra-dural hemorrhages, but have never seen one inter-cord below medulla."—WOOD.

"My personal experience of intra-medullary hemorrhage of the cord is limited. I have seen a number of cases at the County hospital, in which I have made this diagnosis, but have never in my life made an autopsy in a case, and have kept no notes of those I have seen. The only cases I have seen have been traumatic. I regret therefore that I cannot give you any imformation based upon my personal experience."—MCBRIDE.

"I regret to say that I cannot give you any information in regard to hemorrhage into the substance of the cord. I recall one or two cases, in which at the *post-mortem* there was some hemorrhage found in the cord, but it was probably secondary in nature, and I have no complete notes of the cases to which I can refer. I do not remember having seen a case of hemorrhage into the substance of the cord, in which the lesion was made out before death and verified by autopsy. Of course, cases in which the diagnosis was made would be useless, unless verified by *post-mortem*. For example, in one patient, whom I saw in consultation, in whom the diagnosis had been made of hemorrhage into the substance of the cord, when I saw the case, the symptoms were such that I felt no hesitation in pronouncing it one of ascending myelitis, and the autopsy proved the correctness of this view. I believe that hemorrhage into the substance of the cord is rare, either as the result of trauma or disease."—SINKLER.

"True hemorrhage into the substance of the spinal cord must be rare. I have no record of a case where the diagnosis was confirmed by autopsy, except, of course, cases of laceration of the cord substance from fracture of the vertebræ. I suspected in cases not of traumatic origin, the autopsy has shown acute hemorrhagic myelitis."—KNAPP.

"I do not now recall a case of hemorrhage into substance of spinal cord."—WEBBER.

"Do you mean hemorrhage within the substance of the cord? If so, I do not believe I have ever seen a case of intra-medullary hemorrhage, and think you will have difficulty in collecting cases of this kind. Inasmuch as the diagnosis must be made with considerable doubt, if possible at all. Nevertheless the object of your inquiry is most commendable."—KRAUSS.

"Cases of this kind are very rare and the going over my history of 20 years past would be an enormous labor and not so much use as collecting such cases as can be found by diligent scouring of the literature of America, England, France, Germany, Italy and Spain."—GRAY.

"I have never seen more than four of such cases and have no notes of them."—LYMAN.

"I have never seen a case where the diagnosis of hemorrhage into the substance of the cord was free from reasonable doubt. I can say nothing from my own experience, further than that it is a very rare disease."—PERSHING.

"I know of only one case, which occurred in the practice of Dr. N. B. Carson."—BREMER.

"I presume you are referring to hemorrhage from traumatism? In my experience hemorrhage from traumatism into the substance of a healthy spinal cord is exceedingly rare. I have never seen a clear case. Capillary hemorrhage may occur in the gray substance in elderly persons, soon after or immediately after the injury, such as a severe fall. I now have some specimens of this condition. If the substance of the cord is diseased or is its vessels diseased, and a certain amount of softening is present, then injury will give rise to hemorrhage in the area of these neurotic patches, and hemorrhage occurs at once. If by reason of injury the cord is disorganized in places the result is then that these places may rupture sometime after."—SHAW.

"I do not remember to have seen the autopsy of any case of spinal hemorrhage."—HUN.

"I have not met with any intra-spinal hemorrhage."—OTT.

"In reply to your questions, Dr. Mitchell wishes me to say that while he has seen many cases in which he suspected hemorrhage within the cord, he has never seen a *post-mortem* which revealed the condition."—B.O., Sec'y.

"Hemorrhage within the cord is a rare lesion. The cases in which I have made that diagnosis have not come to autopsy, and therefore I am not justified in making any personal dogmatic statement concerning them."—CHADDOCK.

It is not essential at this time to show the great breadth of trauma as a disease producing agent, as that has been a fruitful theme assayed by everyone in consideration both of brain and cord injuries. It is, however, pertinent to the subject under consideration to mention that trauma of the spinal cord covers almost the entire extent of cord symptoms. They are of indefinite number, not only as regards their great diversity and type, but equally so as relating to their generally various stages. All kinds of injuries to the cord are at times competent to produce myelitis. It has been noted by many writers upon the subject that a myelitis produced by a localized concussion is far more extensive than that ordinarily occurring in primary myelitis, as the latter may only manifest at times a few symptoms, while the former are very prominent in a great many of the symptoms in a remarkably short time. Thus Gowers, in speaking of the rapid onset in some cases of myelitis, says "such rapid onset resembles that of spinal hemorrhage in addition to inflammation;" hemorrhagic myelitis. "Such cases are however, sufficiently rare as to not interfere with the diagnostic rule that a sudden onset means a vascular lesion, and that the characteristic onset of myelitis is rapid, not sudden." Further on in his review of this subject, he again asserts that, "hemorrhagic myelitis is scarcely a special form since any acute inflammation of the cord may be attended by a sudden extravasation of blood." Lloyd, under the caption of disease of the spinal cord in "Dercum's Nervous Diseases" by American authors, says: "The recent medical literature contains the records of some striking and characteristic instances confirmed by autopsy of true hemorrhage within the substance of the cord, so that it is no longer reasonable on *a priori* grounds that such hemorrhages cannot occur, and that myelitis has been mistaken in all such cases for hemorrhage. The reverse is more likely to be true, especially in traumatic cases, in which the so-called myelitis is probably a necrotic softening, having as its initial lesion a blood clot or minute capillary hemorrhages. It has been assumed almost universally that for some mysterious reason the spinal cord is exempt from those accidents in

the vascular system, such as embolism and thrombosis and hemorrhage that play such a conspicuous part in cerebral pathology. This assumption has always appeared to the writer to be entirely unwarranted. The explanation for it, that is, to say, that the long course of the spinal vessels relieves them from the effects of undue blood pressure, seems to be not in accord with sound hydro-dynamics and the claim that capillary aneurisms are never found below the Medulla Oblongata, at least, needs confirmation."

Dr. Joseph Collins in the *New York Medical Record* of May 27th, 1893, says: "Our ideas concerning the causation of myelitis have within the past few years undergone a great change, formerly the occurrence of acute myelitis was largely attributed to cold and dampness, to strains, excesses, fright and to trauma. But to-day there are not a few who refuse to believe that these factors can stand as the individual causation of acute myelitis. It is not consistent with our knowledge of exudation and destructive inflammation in other parts of the body, in the light of the progress of bacteriology to believe that exposure to cold can set up an acute destruction inflammation in the spinal cord, involving no greater geographical area than the breadth of the finger. In the first proposition of the cases, if not in all, there must be some infectious or toxic element. This infectious element is the pathogenic germ or the toxic substance manufactured by such germ which attacks directly the spinal cord." It is not illogical to assume that an explanation of the unusual occurrence and causation of myelitis can be justly and reasonably explained upon the germ theory of disease. No cause can be *per se* individual and unaided. Thus Senn says, "it still remains a disputed question whether pathogenic micro-organisms can exist in the body without giving rise to disease. It has been definitely ascertained by experimental research that many of the pathogenic microbes are harmless, as they remain in the circulating blood, and that their specific pathogenic action only becomes evident after localization has taken place in some part of the body in a soil prepared by injury or disease for their reproduction. It has also been conclusively shown by clinical

experience that pathogenic spores may remain in the healthy body in a dormant condition for an indefinite period of time, until by some accidental pathological change the tissues in which they may exist have been prepared for their germination. Numerous experiments will be cited elsewhere, in which injections of pure cultures directly into the circulation produce no ill effects in healthy animals, but when previous to the injection, or soon after an injury was inflicted in some part of the body, localization occurred at the seat of trauma, and in the *locus minoris resistentiae* thus created the microbes produced their specific pathogenic effects. From these facts, it is reasonable to assume that pathogenic microbes, may and do exist in the healthy body without necessarily giving rise to disease, especially if, as is well-known, they are being constantly eliminated through the excretory organs."

It is a well-established fact that the Klebs-Löffler bacillus may be found upon mucous membranes without producing diphtheria, a nidus seeming to be necessary for its production. Again the bacillus of tuberculosis can exist in man without producing tuberculosis. A long series of bacteriological anomalies seem plainly to indicate the dormancy of microbic forms in the human being.

It is a well-established fact that gun-shot wounds now and then manifest remarkable lesions. A bullet may strike the spinal column and lodge in its vicinity, to be immediately followed by as complete paraplegia as if the cord had been cut in twain, and yet the spinal column may not present evidences of the injury, while the cord may be thoroughly softened by this concussive force. Eskridge* reports a case of traumatic myelitis in a patient who was shot at the level of the ninth dorsal vertebra, the patient at once became paraplegic. An operation was performed in consequence of injury, and there was no sign of the ball, or its track. Upon autopsy, two months later, when the dura was opened a thick layer of yellow pus was found surrounding the pia mater and cord. The cord had been

*Sajous "Universal Medical Science Annual," Vol. III, 1890.

destroyed for nearly half an inch. Leyden, also draws attention that in traumatic myelitis, that there is not necessarily direct injury to the spinal cord, but may be the result of commotion or concussion. Lejars, of Paris, classifies concussion injuries into grave and incurable. Throburn* both in *post-mortem* study and in the operating theatre has demonstrated, that in cases of injury to the cervical region of the spinal cord, that recoil from injury is far more frequent than persistent displacement, and that their relative proportion is as two to one. He further claims that in injuries of the spine and spinal cord, in which a crush is followed by a recoil of the vertebrae, cases generally die. This certainly appears a just and legitimate conclusion. For Felizet in his experiments with the human skull demonstrated that when he filled a skull with paraffin and dropped it on the floor, that upon opening the skull no fracture was found, but at the point of impact the bone had been driven down upon the paraffin flattening it. And that the bone had sprung back without fracture to its original place. Thus the extent of force affecting the paraffin was indicated by the degree of the resulting impression. If we can obtain recoil in skull injuries, it certainly is natural to infer that they can be obtained in so flexible a portion of the spinal column as the cervical region. It has been thus far shown that in crushes arising from concussion of cord, either by the concussive force of gun-shot projectiles or destructive compression, followed by recoil are generally fatal, as repair in either instance, if in any way excessive, is impossible. There can be no doubt of the positive force of localized concussion, as a lesion producing factor. We believe that many traumatic cases explained upon a basis of vascular involvement readily come under the head of concussion, or co-incident recoil. It is not our intention to either enter into or discuss injuries coming under the head of compound fractures, dislocations, punctured wounds etc., nor take in the subject of haematorrhachis, as we are only dealing with uncomplicated intra-medullary lesions of the cord.

*Sajous "Universal Annual, M. S." Vol. III, 1895.

From the accumulated evidence thus far presented, it will be seen that there is not entire and perfect unanimity of opinion as to the existence of primary intra-medullary hemorrhage. It would seem that ample time and opportunity had been accorded to thoroughly disprove the assertions of Charcot and Hayem, that primary hemorrhage into the cord does not occur. The proof against these assertions certainly is neither continuously definite, nor sufficiently free from doubt as to constitute always indubitable evidence of its existence. In one case mentioned by Thorburn, a laborer was injured by a tippler of coal falling upon him, he was injured upon the 30th of December, and died upon the 2nd day of January, an interval of four days, while there was no evidence of injury to the vertebral column the membranes of the cord were quite normal, as also was the external appearance of the cord itself. There was found in the central gray matter of the cord a dark black hemorrhage in the lower cervical and upper dorsal regions. This hemorrhage measured from $1\frac{1}{2}$ to 2 inches in its vertical direction. This case as detailed does not give the interval of time from the receipt of the injury and the first appearance of grave symptoms. Thorburn states, that the patient was conscious upon arrival at the Hospital, but that the patient had stated that he had been rendered insensible for some time by the injury. May not this have been a case of "cervical recoil," and not primary traumatic hæmatomyelia? Thus, Sachs says, "if there is hemorrhage into the cord, the symptoms must manifest themselves with unusual suddenness. Complete paralysis in a few minutes, or at the utmost in an hour is the usual result."

Eskridge says, "that the symptoms come on immediately after receipt of the injury." Peterson and Bauduy state that the symptoms come on instantaneously. Starr says, "immediately after an injury and spontaneously in medical cases," while Gowers says, "suddenness of the onset is characteristic of the disease."

Here we have the expressions immediate and instantaneous used in the description of primary traumatic intra-

medullary hemorrhage. Immediate, means not deferred by an interval of time. Instantaneous, means done in an instant. Hence, these expressions do not inaptly describe the rapidity of occurrence. But in the description of non-traumatic primary haematomyelia spontaneous and sudden are indiscriminately used. The word sudden certainly seems to more appropriately describe its occurrence, as sudden is defined to mean that which is an unexpected occurrence, while spontaneous is that which occurs by it's own force or energy without the impulse of a foreign cause. For this reason, we would choose the expression sudden in preference to that of spontaneous in the description of this trouble. In the case mentioned by Sharkey, the patient was a boy and hurt by a fall while skating, he had many falls; the last was more severe than the others. The boy walked home apparently unhurt, symptoms were not manifest until two hours afterwards. The boy, however, lived eight days after the accident and died of pneumonia. Here certainly comes in a natural doubt as to whether this might have been a case of recoil or not. The autopsy developed the fact that neither spine or membrane had been bruised, lacerated or that hemorrhage had occurred within the spine and membranes. It is stated that the pia was congested, but free from lymph. While there was a localized swelling at the third dorsal segment, which bulged at this level of the cord. That above and below this bulging of the cord it was softened and of slight yellow tinge. Extravasated blood was found in the whole of the transverse extent of the cord, and only a slight quantity of white and gray matter on the right side could be determined. The anterior and posterior cornua of gray matter of left side was converted into a long cavity containing blood, which extended as far as the upper cervical region and below to the mid-dorsal region. Is it impossible for this to have been a recoil crush? Here the third dorsal segment is in direct association with the second dorsal vertebra. And it is not detailed the manner in which the boy had fallen, but it is stated that he had many falls and the last was the worst. Certain it is that after eight days, hypostatic conditions

are likely to have come and rendered uncertain *post-mortem* evidences in immediate vicinity. Aside from the fact that above and below the bulging cord showed that the substance of the cord was softened. Is it an absolute certainty in this case as to whether the softening or the hemorrhage occurred first? In two cases mentioned by Hoch, in one the symptoms were not manifest until three weeks. In the second case mentioned by him there was a six days interval between the injury and the development of the disease, as Birdsell in commenting on these cases, says "the relative long interval in both cases between the time of accident and the appearance of the first symptoms suggest to me that a progress of myelitic softening may have furnished the condition for a subsequent hemorrhage."

Regarding the non-traumatic forms of primary haematomyelia, the case mentioned by Kindred is certainly the most remarkable, which occurs in the literature on this subject up to date, not a seeming break in the history of the case. The patient was in perfect health and without premonitory symptoms was instantaneously seized with evidences of this trouble. Three hours later the symptoms were at their highest, and then the patient dying in the remarkably short time of six hours and a half after the seizure. Outside of this case, the great bulk of cases are opened to reasonable doubt as to their primary and secondary nature. From what has been said thus far and from the writers quoted, the proof of the occurrence of primary haematomyelia is still more or less enshrouded in doubt, out of 79 cases, which we have found mentioned in the literature of the subject, only 17 autopsies were held, leaving 62 unverified and in doubt. Aside from this, many of the autopsies held do not give complete and perfect data. This is not convincingly definite aside from that it is impossible at all times to interpret *post-mortem* evidences as they are frequently made in autopsies. Dana, Wood, Knapp, Gray, S. Weir Mitchell, Shaw, Sinkler, Hun, Ott, Webber and Krauss, all plainly indicate the extreme rarity of this trouble and have no records establishing its positive occurrence. We, of course, mean primary intra-medullary hemorrhage.

Dana believes that haematomyelia is almost a purely medical disease. He has had no autopsies, knows of none which show that injury to the spine or body caused hemorrhage in the substance of the spinal cord alone, in a previously healthy case. He does not believe that spontaneous medullary hemorrhages are so very rare.

It will thus be seen that many of the most experienced and eminent neurologists, whose opportunities and extended researches have placed them in position to determine many of the neurological problems of the day, are by no means positive of the occurrence of primary traumatic uncomplicated haematomyelia, and many are uncertain of it as a diseased condition.

We cannot help but believe with Dana, that it is almost a purely medical trouble; certainly the literature on the subject indicates the same more than it would indicate it as arising from trauma. While most writers attribute to trauma the most frequent and effective element of causation, yet the best proven cases plainly come from non-traumatic sources. The undoubted frequency of *post-mortem* mistakes, the lack of disciplined competent data, makes it evident that in primary haematomyelia, diagnosis is, indeed, remarkably rarely verified, and at all times strangely mixed with just and reasonable doubt. Exact observation in this trouble are unusually infrequent. A revision of the accumulated cases are not of sufficient number and of such complete scientific detail as to very largely change previous existing views. While Van Gieson has described *post-mortem* evidences in complicated cases, which have not been previously described, that is, to say, peculiar necrotic foci at a considerable distance from the myelitic focus, which he claims are caused by hemorrhage, still we believe that further investigation is needed to place a true interpretation of these *post-mortem* evidences, as to their primary and secondary nature. Aside from the fact, that the cases mentioned by him cannot be included in the category of pure and uncomplicated primary haematomyelia.

Manley's report certainly should command attention, as we believe it to be complete in detail and occupies a very

large share of traumatic injuries to the spine. Thus in 642 cases of injuries of the vertebral column, in not a single instance was primary uncomplicated hemorrhage into the medullary substance of the cord noticed. This experience accords very closely to the writer's. Thus out of 1136 injuries to the vertebral column (not counting a much greater number to the body, buttocks and concussive falls) both from plainly evident lesions and those unaccompanied by visible lesion, there is not to be found in the record a case of primary uncomplicated intra-medullary hemorrhage. And this comes from a collection of nearly thirty thousand cases of railway injuries accumulated in the past fifteen years. Extra-dural hemorrhage and the complications of fracture, dislocation, punctured wounds, etc., were manifest. In our experience, injuries to the brain are far more frequent in violent falls and jumps from moving elements, such as rapidly moving trains, falls from telegraph poles, bridges, trestles, etc. My own experience, certainly emphasizes the fact that a sound, healthy cord with normal surroundings cannot be subject to primary, traumatic uncomplicated intra-medullary hemorrhage. We do not believe it possible that hemorrhage can take place into the substance of the cord without some pre-existing alteration in its consistence produced either by trauma or disease. That, at last in traumatic cases, a direct localized concussive force is necessary to produce either a crush or a more or less extensive bruise of the cord substance; the demonstration of the possibility and capacity of the lesion-producing power of recoil in portions of the spinal column, particularly in the cervical and upper dorsal region, certainly tend to make all so-called cases of primary uncomplicated traumatic haematomyelia excessively doubtful as to occurrence, and we do not believe that a single case has ever been reported entirely free from doubt, which has demonstrated its possibility.

Now, then, in order not to take up any more of your time, we would ask if there has ever been shown by post-mortem evidence a case of primary, traumatic, uncomplicated intra-medullary hemorrhage, when it was plainly and indubitably shown that no alteration had occurred in the

spinal cord substance before the hemorrhage commenced? Has there ever been demonstrated a case in the traumatic form of primary haematomyelia wherein the lesion commenced direct with the blood vessel? We believe that nature never intended, in the construction of the human being, that the spinal cord should become a menace to human life by the loose construction of its vascular supply.

From quoted authority, surgical writers seem not to have investigated this subject, except in a single instance, with the same intelligent assiduity as the neurologists. It is manifest from what has preceded that the painstaking, conservative, competent and experienced neurologist, expresses doubt as to the occurrence of haematomyelia in its primary, uncomplicated traumatic form. Hence, we are compelled to believe that in view of all the attendant elements of uncertainty, that the primary, uncomplicated traumatic form of hemorrhage into the spinal cord has not been demonstrated, and that at least in this variety, Charcot and Hayem's assertions may be correct.

SELECTIONS.

NEUROTHERAPY.

DIETETICS IN NEURASTHENIA.—Jas. G. Kiernan, M. D. (*The Medical Standard*), says Neurasthenics are generally dyspeptic. They suffer from nervous dyspepsia, as the diagnosis has it. This is correct, and nowhere is the vicious circle in pathology more clearly established than in gastro-intestinal neurasthenia. Weak nerve centers interfere with normal gastric functions and again the products of a faulty digestion, being absorbed by the blood, poison in their turn the nervous centers, including those which preside over nutrition. In nine cases out of ten pepsin or some other reputed digestive ferments are prescribed and taken for months and years, again to the detriment of the patient. Many carry their dyspepsia powders with them, having become perfect slaves to the ferment. In many cases pepsin does direct harm, in others induces inactivity of the gastric glands on the same principal as predigested foods. The advance physician is prone to resort to the stomach tube and wash out the stomach. In some this is of great benefit, at least temporarily; in other patients the introduction of the tube marks the beginning of a period of intense suffering and of a series of collapses.

A tolerably reliable dietary injunction is: Do not eat anything raw. With few exceptions, which generally have to be learned by experience, the neurasthenic is apt to digest, under proper precaution, anything that is well done. Idiosyncrasies, however, ought always to be expected.

While this is most emphatically true and a great deal of most decided harm is done by manufacturing nosophobiacs through washing out the stomach and allied procedures in neurasthenia, still the mal-digestion and mal-assimilation problems present and evinced in lithæmia, glycosuria, oxaluria, and other

evidences of perverted hepatic action and tissue metabolism do involve a question of no little interest from the stand-point of therapy and prognosis. Digestion and absorption of nitrogenous material is a problem solved with comparative ease. Digestion and absorption of starches and sugars is a much more difficult task. It is undeniable that in many cases of neurasthenia, starches and sugars would be of decided value could they pass the intestinal tube into the system. In children whose state closely resembles that of neurasthenics, degenerates and neurotics, starch and sugar are admissible foods not to be omitted from diet. The problem here as in neurasthenia is to pass them beyond the intestine. In my opinion the problem is excellently solved by the introduction of the product of fungoid action known as taka diastase. It can be dusted on the starchy food without interfering with its flavor.

LUMBAR PUNCTURE.—Herr Quincke, of Kiel, made a further communication on this subject to the Congress of German Naturalists and Physicians (*Medical Press and Circular*, October 30, 1895.), which appears to be attracting increasing attention, describing some technical improvements which he had made. He considered it all important, in every case in which the cerebro-spinal sac was punctured, to ascertain the degree of pressure within it. In all the cases punctured by himself he had succeeded in withdrawing fluid. The ordinary subcutaneous injection syringe was useless for the purpose, as pus would not flow through the cannula and the needle was also too short. Lumbar puncture was not only a valuable enrichment of our means of diagnosis, but had occasionally been of great therapeutic value. Thus in acute serous meningitis considerable relief followed the procedure.

Prof. von Ziemssen, of Munich, said that although the matter had not yet gone beyond the experimental stage, and we had yet to see whether direct medicamentation of the diseased spinal membranes would be possible, it could be said that the diagnostic and therapeutic value of lumbar puncture was beyond doubt. He did not use a trocar, but a simple Dieulafoy needle. The operation was especially

difficult to perform in fat people without an anæsthetic, and he had decided to give one in all cases. He had never seen any ill consequences from the operation. He had seen good results therapeutically not only in a serous meningitis, but also in cerebro-spinal meningitis.

Herr Lenhartz, of Leipzig, had performed puncture in fifteen patients, three of them cases of cerebro-spinal meningitis. He had never seen a positive result, although the needle certainly entered the spinal canal. He had never seen it followed by a distinct improvement. In one case of puncture he had succeeded in finding tubercle bacilli in the fluid withdrawn.

STERILIZING THE CEREBRO-SPINAL FLUID.—Ventriculo-lumbar puncture of cerebro-spinal axis. Dr. Henry W. Coe of the *Medical Sentinel* calls attention in his Editorial Gossip from New York to the following remarkable therapeutic procedure by Jacoby.

Dr. Jacoby presented a paper (to the November Meeting of the New York Neurological Society) upon lumbar puncture of the spinal canal, in which he showed it to be, in skilful hands, a comparatively simple and safe procedure, and reported cases where he had relieved paralysis and other symptoms of hemorrhage about the cord by a withdrawal of the fluid through the puncture. He dwelt especially upon the value of the method as a diagnostic procedure, showing that in tubercular meningitis and purulent meningitis, the fluid withdrawn could, under the microscope, furnish positive diagnosis of the nature of the disease. He referred to the benefits to accrue from combined puncture of the cord and the penetration of the ventricles of the brain and the passage of a stream of sterilized water into the ventricles and through the brain and down the cord and out at the puncture of the cord. Dr. Jacoby makes his puncture with a small sized hypodermic syringe, not using suction, however. He had washed out the spinal space with antiseptic fluid on one or two occasions with benefit to the patient.

SUBORDINATE USE OF SULFONAL.—Dr. E. W. Bing summarizes the uses of sulfonal as follows:—

"1. As an antispasmodic it is useful in all forms of pain due to muscular contraction, as in colic, cramp of muscles, hiccough, asthma, tetanus, etc.

"2. As an analgesic it has proved valuable in neuralgias, colic from gall-stones, pain following fractures or produced by nerve pressure in any locality either from inflammatory exudation or from transient causes, as cramp of thigh muscles in labor or in choleric conditions, or those painful cramps in the calves of the legs seen in chronic alcoholism.

"3. Its anti-neurotic action is well illustrated by its beneficial effects in epilepsy, hysteria, etc., in which it not only controls the attacks, but at the same time lessens the liability to them. The irregular and involuntary movements of chorea are likewise controlled.

"4. Its anti-diaphoretic action has been illustrated in the prevention of the night sweats of phthisis, where a dose of a few grains will generally give a comfortable night without the discomfort produced by the sweat. It has been reported as beneficial in diabetes, diminishing the sugar and the excessive quantity of urine."

SLEEP.—A very sensible article by Dr. W. J. Bell, of St. Joseph, Mo., appears in the November *Medical Herald* on this subject. We abstract two paragraphs. The author evidently reads the ALIENIST AND NEUROLOGIST.

"Upon the patient's ability to procure refreshing sleep, more than upon any other factor, depends the prognosis in a given case. It would be well for the gynecologist, the surgeon and the man in general medicine, and better a thousand times for the patient if the value of sleep as a therapeutic agent were more fully considered."

"Too often has the surgeon's knife been given the credit for convalescence when ovaries, only partially diseased or not diseased at all, have been removed, or rents in the cervix or perineum too insignificant to mention have been sewed up. Careful weighing of the evidence in such cases will frequently show that rest in bed and regular diet with perfect sleep were the means of granting relief."

ANTISPASMIN—A NEW REMEDY FOR WHOOPING COUGH.—Antispasmodin (*Merks*) consists of one molecule

narceine sodium and three molecules of salicylate of soda.

Demue treated 200 whooping-cough cases of various ages, and obtained good results.—*Archiv. f Kinderheile.*

PATHOLOGICAL ANATOMY OF ERGOTISM.—From the later part of 1889 to autumn, 1890, in the State of Wjatka (*N. Winogradow Wratch, 21, 22, 23, 1895*), 2749 people became afflicted with ergotism poisoning; 535 cases of which proved fatal. The convulsions were observed in all cases; no incident of gangrene was noticed. In seven cases the liver, spleen and kidneys were examined microscopically. The spleen showed the following changes: The connective tissue frame work strongly marked, the pulp hyperemic, the Malpighian bodies distinctly marked, a few greatly enlarged and hyperplastic, others appear in the centre as a uniform layer with no nuclei. The arterial walls, particularly the central vessels of the Malpighian bodies, are thickened, glossy and show hyaline degeneration. The liver is hyperemic, the liver cells atrophied, the nucleus either lost or the staining unsatisfactory; the arterial wall had the same changes as in the spleen, the lumen at times entirely obliterated, results of coagulation, necrosis of the liver cells. In the kidneys the changes prevail in the cortex substance, hyperemia of the glomeruli, formation of a uniform mass in Bowman's capsule, with consecutive compression and changes of the gloomeruli, glossy looking changes in the blood vessels with coagulation necrosis of the epithelium of urinary tubules.

THE HYGIENIC IMPORTANCE OF LIGHT.—W. Kruse concludes (*Zeit fur Hygiene und Infect:—Internat. Med. Mag.*) an interesting article with the following statements:

The influence of light on the organs of sight is uncontested. In like manner the mind, without doubt, is affected. The influence of light on chlorophyll vegetation and usually on bacteria is of hygienic interest, because in light we evidently posses the cheapest and most universal means of disinfection for our cities and our dwellings. From this stand-point we should allow large quantities of light to enter our dwellings, but a consideration comes in view which limits the usefulness of light as a disinfectant for dwellings.

The direct sunlight possesses, when compared with power-

ful disinfectants, various unpleasant actions, as the disagreeable influence of light on the eye which has already been mentioned. The intense heat of the direct rays in our dwellings is often unfavorable hygienically. For these reasons a medium grade of light is preferable.

These considerations lessen the disinfective importance of light in some degree, and it is lessened still more when we remember that each accidental shadow—for example, that cast by an article of furniture—destroys the effect entirely. It may be seen, therefore, that other means, such as cleanliness and systematic disinfection are necessary for the removal of infectious substances from our dwellings.

The disinfecting power of free sunlight is hard to estimate because its action is very intense and continual. Buchner claims that light is the main source of the so-called self-disinfection of streams. Experiments show, however, that diffuse daylight has no powerful influence on great numbers of bacteria. Practical bacteriological researches concerning the self-disinfection of streams can be cited as containing evidences against Buchner's hypothesis, as, for example, the well-known work of Frank on the bacteria of the Spree and Havel in Berlin.

SUPRARENAL GLAND AS A THERAPEUTIC AGENT.—Dr. George Oliver recently read an important contribution to the literature of this subject, before the Pharmacological Section of the British Medical Association. In a marked case of Addison's disease the nausea and muscular debility were greatly diminished, the improvement persisting as long as the drug was administered, and when the treatment was suspended for a week the patient noticed that the pigmentation of the skin—one of the symptoms—became more pronounced. Further, the remedy was found of use in certain conditions marked by loss of vaso-motor tone. In cases of simple anaemia, improvement was noticed during the treatment, and there is some hope that it may prove a useful auxiliary in the treatment of the graver forms of anaemia. In cases marked by the cyclic appearance of albumen, the latter disappeared and the general health improved. In two out of three cases of diabetes mellitus

the remedy also appeared to have a good effect, the amount of sugar being lessened and the tone of the circulation improved; this agent apparently holds out the promise of considerable therapeutic value. A preparation of the suprarenal gland for internal administration supplied in tablets, capsules or bulk form, each tablet or capsule representing about one quarter of an entire fresh suprarenal gland of the sheep is offered to the profession by those ever alert friends of the profession, Parke, Davis & Co.

CLINICAL PSYCHIATRY.

HOMICIDAL INSANITY.—The *Medical Record* quotes the following from Burdraghi.—“The great majority of homicides by the insane are committed under the influence of persecutory delusions. Eighteen per cent. were associated with epilepsy, and one was anthropophagous. In fifty-eight per cent., the murdered persons were relatives, and in forty-two per cent., strangers. The youngest homicide was only four years of age, a girl who threw into the fire an infant she was left to mind; the oldest was seventy years of age; the majority thirty, between thirty and forty years. Seventy-five were men, and twenty-five women, seventeen were quite illiterate, and sixty-one very imperfectly educated. Religious delusions were present in twelve, and in five of these, were the immediate motive of the crime; twenty-five laboured under hallucinations, and fourteen had been previously insane. Fifteen were instances of plural homicides, one individual having perpetrated no fewer than eleven. In nineteen no motive could be assigned. That even excessive joy may subvert the reason is proved by the case of a man who, having unexpectedly come in for a fortune of 10,000,000 dols. killed his wife and children. In fourteen per cent, a surprisingly small proportion, was the act premeditated, and, as in fifteen per cent. of the whole, considerable ingenuity was shown in its execution. Twenty-seven sought concealment in flight, but all sooner or later

returned. Three only attempted to prove an alibi. Twenty-three prevaricated, but of these, twelve had lost all recollection of their act, sixty-seven remembered them, but in fourteen cases they were committed under the influence of hallucinations; fourteen others, though cognizant of what they had done, were of very weak intellect, and one was a case of transitory frenzy. Fifty-four exhibited more or less remorse, but of these, forty-six failed to realize the heinousness of their crimes; seven gloried in them; twenty-three attempted to exculpate themselves; thirteen undoubtedly, of weak intellect, simulated insanity; eleven of these were subsequently transferred from the asylum to the jail; and six in all succeeded in escaping from asylums.

PSYCHOPATHIC FAMILIES.—Morbid types are not always transmitted in psychopathic families in identical forms but more often become aggravated in their transmission through generations. Suicidal insanity is constantly transmitted to descendants in the same form. The periodical form is relatively frequent. Somatic signs of degeneracy are much more frequent than in non-hereditary lunatics, but are not aggravated proportionately to the psychic degeneracy. Very often sexual abuse, alcoholism, morphinism and onanism are concomitant causes aggravating the heredity in the families. Bodily diseases attack the hereditarily insane with more than ordinary frequency. Maternal heredity is propagated to the greater number of descendants. Psychopathic families have a fatal tendency to intermix and fuse among themselves thus re-enforcing the heredity.—Perugia, *Bost. Med. and Surg. Jour.*

OOPHORECTOMY AND SEXUAL APPETITE.—Dr. Isabel M. Davenport, of the Kankakee Insane Hospital, reports the case (*Med. News*) of a 34-year-old married nullipara whose mother died of paretic dementia. The patient had always been delicate. Some years ago the tube and ovaries were removed for pyosalpingitis and a very erotic tendency which was supposed to be due to the diseased organs. After recovery from the operation the woman had "queer spells," and became addicted to the use of opium, tobacco and liquor without abatement of the eroticism. She became

very depraved. After escaping from her friends and spending three weeks of fearful debauchery in one of the large cities she was brought to the hospital June, 1895, in a state of intense furor. Dr. Davenport reports the case of a 30-year-old unmarried American of good family who had one miscarriage. From puberty she had been extremely irritable and erotic about the menstrual periods. She had attempted homicide at these times. Some years ago the ovaries and tubes (which were healthy) were removed with a view to removing the cause of her erotic, irritable tendencies. Notwithstanding this operation the woman continued in the same mental condition until June, 1895, when she voluntarily committed herself into the Kankakee Insane Hospital where the heart was found to be enlarged, the apex being displaced downward and toward the sternum with a harsh blowing sound at the apex during the systole. The erotic attacks and the irritability are ascribed by her to these "hot flashes."

THE SIMULATION OF INSANITY BY THE INSANE.—Dr. Leon Charnel, of Belgium (*Bull. de la Soc. de Med. Ment. de Belgique*), in speaking of simulation by the insane, says, that in cases of insanity, where the intellectual faculties are not too much disordered, the insane may simulate another form of insanity than their own. The forms of insanity most often simulated are, in order of frequency, imbecility, dementia and mania. The other forms are not as frequently simulated. A lunatic generally simulates insanity to escape punishment, and an expert physician should not, therefore, in such cases, be satisfied with a diagnosis of simulation. Such diagnosis does not exclude real insanity, and the physician should, therefore, endeavor to ascertain whether or not the simulator is himself a lunatic. With care, patience, and long continued observation, it is possible to make a complete and correct diagnosis, and this is the more important, as in these cases the serious question of responsibility arises.—*Dublin Journal of Medical Science*.

THE PAROXYSMAL SLEEP.—Dr. Ch. Fére (*Sem. méd. Hospitalstidende*) says paroxysmal sleep differs from normal sleep in this: that while the disposition to fall asleep in

the latter instance develops gradually and at certain times, and, furthermore, is accompanied by prodromes; this tendency may, under pathological conditions, make its appearance quite suddenly, without premonition, so that the individual becomes prostrated in a moment. The pathological conditions in question are various circulatory and digestive disturbances, diseases of the heart and liver, diabetes, gout, renal calculi, lipomatosis, hysteria, epilepsy and neurasthenia. This pathological sleep was termed "narcolepsy" by Gélineau, in 1881. The patient falls suddenly as if in an epileptic attack, and remains in deep stupor, from which no stimulant can rouse him. The narcolepsy may be a sleep of an epileptoidal nature; it may happen to the patient at the table, while he is at work, when he is walking on the street, etc. Laségne reports a case in which a waiter, 15 years old suddenly fell asleep while serving, and standing, slept a minute with a glass in his hand, after which he awoke and continued the serving. In another case the person in question slept in a standing position on the street, leaning against a lamp-post or a wall, with a basket of crockery on his back. Sometimes the sleep does not begin so suddenly. Some patients have the ordinary prodromes of sleep; besides the symptoms emanating from the brain, the gait becomes difficult and heavy; sometimes they stagger as if intoxicated, the speech becomes slow, the voice feeble. Occasionally the sleep develops before they have had time to sit down, or to select a place for themselves. The sleep may last from a minute to several hours; the average is 10 minutes to a half an hour. The frequency of the attacks varies greatly. Sometimes they are at first very far apart, but as a rule they show a tendency to gradually increase in frequency. In some patients they occur once a week, once a month, or at greater intervals; in others again they occur once or several times daily. In one of the cases reported by Gélineau the attacks had been as frequent as 200 times daily. A patient reported by Caffe, awoke to fall asleep again immediately. Sometimes the patients work in a standing position to prevent them from falling asleep. A patient under the observation of the author falls asleep

whenever he leans against any thing in the room. The attacks may be produced in a variety of ways; thus, walking, or some other muscular exertion, defecation, coitus and emotion may induce the attack. Some patients are especially sensitive during the raging of a thunder-storm. The paroxysmal or periodical sleep is a profound sleep, in which one finds all the characteristics of the normal sleep intensified. The extremities are completely relaxed, the sensibility considerably diminished, so that neither shouting nor intense mechanical stimulations will wake the patient. The sleep is devoid of dreams. The respiration is often very slow, may become reduced to 10 or 12 a minute; the pulse is also retarded (as low as 50 a minute). The pupils are as a rule dilated, and do not contract even if the patient be exposed to strong sun-light. The awakening takes place after a shorter or longer time, and the disturbances in mobility, sensibility, and intelligence are more or less continuous, according to the profoundness and duration of the "narcoleptic sleep." The patients who sleep but a few minutes are able to resume their occupation at once, those who sleep for some time are for a while unsteady in their movements, their sensibility is diminished, and their intelligence dulled. These patients sleep as a rule well at night; it is only exceptionally that insomnia is present. Narcolepsy is neither a neurosis nor a disease, as some writers have tried to make it; it is met with, as has already been said, in a number of pathological conditions. It may be the result of a severe attack of indigestion in people who eat and drink to excess; in such cases it often sets in with great regularity, the sleep occurring at certain times just after meals. Depaul reports a case in which a woman in labor fell into a periodical sleep during her pain. In hysterical and neurasthenic people hunger may be the cause of the phenomenon; a neurasthenic, who suffered from vertigo just before meals, sometimes fell into a profound sleep, lasting 15 to 20 minutes, at the moment he would seat himself at the table, whenever business would delay his eating 30 to 45 minutes. The periodical sleep never showed itself in this patient under any other circumstances. Narcolepsy occurs in patients

suffering from rheumatism, obesity, renal caluli, and diabetes; in this latter disease the sudden sleep may perhaps be considered a "coma on a small scale." It is often met with in nervous families, emotions being then the exciting cause; in one case a local asphyxia of the extremities was present at the same time. In some instances it alternates with slight epileptoid or epileptic attacks; for this reason it is sometimes called epileptoid sleep. It is well known that epileptics have from time to time attacks of sudden sleep, varying in duration; Mendel, therefore, considers the paroxysmal sleep a form of masked epilepsy. Narcolepsy is often met with in hysteria, occasionally in general paralysis, and in dipsomania. In one of the cases published by Morton, the attacks were accompanied by ejaculation of semen, in another case, reported by Caton, by spasmodus glottidis with asphyxia, the attacks repeating themselves at intervals of 5, 10 and 20 minutes. The periodical sleep occurs in people suffering functional or organic heart disease. It is seldom that it makes its first appearance in childhood, and, excepting the hysterical form, it occurs most frequently in men. The paroxysmal sleep in hysteria is quite different from the real hysterical sleep, which as a rule develops gradually, and lasts much longer than the narcoleptic attacks. Narcolepsy is easily differentiated from the real hysterical sleep, just referred to, from the sleep of the negroes (nelavans or sleeping sickness), from Gerlier's vertige paralysant, and from nona. In making a differential diagnosis it is to be remembered that the paroxysmal sleep is met with in diseases causing a disturbance of the nutrition of the whole organism. While the prognosis is dependent upon the nature of the disease which it accompanies, it is in itself indicative of an unfavorable prognosis in the disease in which it occurs. The therapy is a part of that directed against the disease causing it; the paroxysmal sleep has been especially benefited by hydrotherapy, electricity, baths in compressed air, and inhalations of oxygen.—*Hoisholdt, Stockton, California.*

NEURO-PATHOLOGY.

CHANGES IN THE CEREBELLUM IN TABES DORSALIS.—Jellinek, (*Deutsche Zeitschrift fur Nervenheilkunde*, Bd. vi. p. 231) has examined the cerebellum in six cases of tabes dorsalis. In all cases there was atrophy of the ganglion cells of the corpus dentatum, the cells being long, spindle-shaped or three cornered instead of round or oval, as in the normal condition. The blood vessels of the parts had disappeared to a great extent. The fibres penetrating the corpus dentatum, the finer fibres in the lobules of the hemispheres, and, in some cases, also the radiating fibres, were more or less degenerated.

ALLEGED REFLEX CAUSES OF NERVOUS DISEASE.—Dr. Philip Coombs Knapp concludes an article on this subject (*American Journal of Medical Sciences*) as follows:

1. The essential feature in the production of many neuroses is the neuropathic state—the degeneracy of the subject.

2. In hysterical subjects, suggestion plays an important part both in the development and in the cure of the symptoms.

3. Disease of any organ may give rise to referred pain in some definite area, but not to other nervous disturbances, except as a secondary result of local disease of the organ. This local disease manifests itself by the ordinary local symptoms, and the nervous phenomena are due to exhaustion, anaemia, intoxications, etc.

4. In a few rare cases injury of a sensory nerve may give rise to epileptiform seizures.

5. Surgical operations for the relief of nervous symptoms should never be performed unless there are clear indications, apart from such symptoms, for an operation.

AUTOPSY ON THREE CASES OF ACROMEGALY.—Dr. Dallemande (*Arch. de Med. d' Anat. Pathol.*, Sept., 1895.) reports as follows: The first case was a man 47 years of age and seven feet in height, who besides characteristic enlargement of the face, skull, hands and feet, had exanthomatous tumors disseminated over the whole body. He

had also impairment of vision, optic nerve atrophy and diabetes, and died suddenly during an attack of diabetic coma.

The heart, liver, kidneys and spleen were two or three times heavier than normal, which he regards as an enlargement due to the disease, rather than a simple accompaniment of giantism. The pituitary body was enlarged to the size of a pigeon's egg, which had caused destructive disease of the sella tursica and by its pressure upon the optic chiasm the optic nerve atrophy might be accounted for. The tumor was sarcomatous. The thyroid gland was cystic, which the reporter regards as a significant fact as showing a parallel relation between these two organs. Ependymal growths in the central canal of the medulla and gliomatous growths just below the floor of the fourth ventricle are regarded as belonging exclusively to the co-existing diabetes.

The second case was a man of 70, in whom the manifestations of disease consisted only of enlargement of the hands and feet and signs of early senility (!) The pituitary body was slightly enlarged and cystic but everything else was negative.

The third case was of a man 54 years of age with cancer. The pituitary gland was slightly hypertrophied but there was cystic degeneration of both it and the thyroid.

Dr. Marie assumes that there is the same relation between the pituitary gland and acromegaly as there is between the thyroid gland and myxedema; the diseased gland no longer removes toxic substances which by irritation lead to acromegalic changes.

Tamburini and Massalongs recognize two periods in the evolution: the first hyperfunction of the pituitary gland producing acromegalic changes; the second sarcomatous or cystic degeneration of the gland resulting in cachexia and death.

Dr. D. differs from both of these opinions; he believes that the lesions of the pituitary gland are merely the result of a secondary process of irritative origin. This gland, he thinks, is only the upper cul-de-sac of the central canal at the neuro-spinal axis and may be regarded as a genuine eliminatory organ, the epithelium being analogous to that of

the kidney. Hence disturbances in the centers of nutritive equilibration distributed in the spinal cord, are assumed to result in the production of acromegalic phenomena and the passage into the blood of abnormal wastes of nutrition which determine secondary irritative lesions in the parts dependent upon the ependymal canal; hence obstruction of this canal and subsequent modifications in the pituitary gland.—N. A. PRAC.

THE PATHOLOGY OF ACROMEGALY.—Prof. Tamburini reports a case of acromegaly, associated with disease of pituitary body (hypophysis). The patient was a woman in whom the first symptoms were noticed at the age of 20. At that time menstruation ceased, and the lower extremities began to enlarge. Enlargement of the head was noticed later, and the arms last of all. The hypertrophy reached the highest degree in the hands and feet. Some years after the beginning of the disease, she manifested delusions of persecution with violent excitement, terminating in dementia. Death occurred as the result of exhaustion from diarrhoea. At the autopsy, apart from the changes in the bones, the only important lesion found was a tumor of the pituitary body, said by the author to be the largest on record. It measured 53 m. m. in length, 39 m. m. in breadth, and 20 m.m. in thickness. The surface was slightly irregular, internally it was of a grayish-white color, and uniform consistence. Histologically it presented the normal gland in structure, except that the septa were thinner and less numerous, and there was an excess of chromophile cells in comparison with the chief cells ("Hauptzellen"). There was no appearance of degenerative processes. The author considers the tumor an adenoma rather than a true hypertrophy. Prof. Tamburini considers acromegaly due to the changes in the pituitary body, and suggests that the enlargement of different parts of the body may be due to a true hypertrophy with increase of function of the gland, interfering with its function. He states that enlargement of the pituitary has been found in all carefully-studied cases of ordinary gigantism—*Centralbl. f. Nervenheilkunde*.

CLINICAL NEUROLOGY.

SENSORY IMPRESSIONS AND VOLUNTARY MOVEMENTS.

—Bastian (*British Medical Journal*, July 27th, 1895) cannot accept the interpretation given by Mott and Sherrington to the fact (discovered by them) that "section of the whole series of sensory roots belonging to a limb," upper or lower, causes lasting motor paralysis in the anesthetic limb. They thought this proved that "not only the cortex, but the whole sensory path from the periphery to cortex cerebri, is in action during voluntary movement;" but this cannot be true, for in complete hemianesthesia due to lesions or functional defects in the posterior part of the internal capsule, there is no impairment of movement whatever of the anesthetic limbs, at least under visual guidance. The extent to which afferent impressions, and the activity of their related centers, are really needed for the production of voluntary movements must be considered in connection with the cause of this paralysis.

Bastian has long contended that the so-called motor centers in the cortex are really sensory centers of kinesthetic type, which are called into activity by stimuli coming from the cortex (for volitional movements) and from afferent nerves and the lower sensory centers (reflex acts), the true motor centers existing only in the pons, bulb, and spinal cord. As examples of cortically initiated movements he takes; (1) Those of speech, where the auditory center (where thought of words is revived), the glosso-kinesthetic center in Broca's convolution, the proper motor speech centers in the bulb, and the commissural fibers of those centers are so interdependent that a lesion in any part of this tract may cause aphasia (combined with "word-blindness" if the lesion be in the auditory word center). In reading aloud, a fourth center (namely, the visual center) receives the first impressions, which are then conveyed to the auditory word center by commissural fibers. Thus, in case of a lesion in the visual center, voluntary movements concerned in speech cannot be performed at the instigation of the visual, but only of the auditory, sense. Again, in (2) limb movements

the visual sense performs the same office as the auditory in speech; that is, the visual and kinesthetic impressions pertaining to the movement are revived there.

(B) Functional defects. (a) Cerebral. Defective nutrition of the kinesthetic centers produces temporary and curable forms of paralysis, mono-, hemi- or paraplegias, often combined with single or double hemianesthesia. In one class movements can be performed only when the eyes are open (? due to kinesthetic center being capable of being roused by a slightly stronger stimulus). (b) Spinal. Bastian believes the form of paralysis produced by Mott and Sherrington to belong to this class; that is, instead of the lowered functional activity being in the cerebral kinesthetic centers, it is probably in the motor centers themselves in the cord, so that they no longer respond to ordinary volitional stimuli from the cortex; not, as Mott and Sherrington think, that volitional power "has been absolutely abolished by the local loss of all forms of sensibility" in the paralyzed limbs.

This explanation agrees with other facts found in these experiments: (1) That the effects are produced only when all the sensory roots are cut in (A) organic lesions, (a) destruction of kinesthetic centers causes paralysis of the corresponding limb plus loss of muscular sense and kinesthetic impressions; (b) in man existence of paralysis of limb movements following a lesion of the visual center or of the visuo-kinesthetic commissure is not proved except for writing movements, the destruction of the left visual word center causing complete agraphia; (c) in the lower animals isolation of the kinesthetic centers by section of the fibers connecting them with other sensory centers causes paralysis, as after extirpation of them. Electrical irritation of the centers, however, produces the same muscular movements as before disturbance of the sensory roots; (2) that the paralysis increases from the attached base to the free apex of the limb, to the delicate stimuli going to the smaller muscles of the hand being less likely to rouse the sluggish spinal centers; (3) that forcible and rapid movements, even of the fine joints at the end of the limb, take place if the animals are made to struggle, to the muscles responding to stimuli stronger

under the influence of emotion; (4) that movements are produced by stimulating the corresponding kinesthetic centers electrically as easily as in a normal limb, to a profound difference between effects of volition and experimental stimulation of the cortex. At any rate, the latter shows that cutting off afferent impressions by section of the sensory roots does not entail a lowered excitability of the kinesthetic centers in the cortex, but the reverse considering the lowered activity of the spinal centers, which the absence of tonus implies. In cerebral hemi-anesthesia, however, there is no lowering of the activity of the spinal centers, and no cutting off of cerebellar influence, so that the action of the cortex is less interfered with. These differences may explain the presence of paralysis when posterior roots are cut, and its absence in cerebral hemianesthesia.

PELVIC DISEASE IN INSANE WOMEN.—Dr. Ella B. Everett, of St. Peter (Minn.) Insane Hospital, concludes (N. W. Lancet) that pelvic examination of insane women in Minnesota does not discover many grave lesions of the generative organs. Most of these patients are Swedes, Norwegians or Germans, or immediate descendants of such parentage. Their physical development favors normal performance of bodily function, and this in part probably accounts for the notable infrequency of pelvic disease in comparison with a similar number of cases in the older settlements. Dr. Rohé reported 26 cases of pelvic disease among 35 insane women examined. Her proportion is far smaller, viz: 32 out of 113 cases and in this number many slight lesions are included. On the other hand such classes of people living amid new surroundings are peculiarly liable to nervous breakdown. This is clearly manifested among the young women of Scandinavian ancestry who enter the training school. While they are apparently vigorous, there is a clearly defined tendency to failure of mental power. In this way it is possible to determine upon pelvic disease as an exciting cause, but the bulk of the evidence is that usually it is a coincidence or at most an effect of systemic disorders. Comparatively few insane patients manifest any relation between the activity of the menstrual function and the

mental state, the proportion of the cases under discussion being 2 per cent. The profuse flow often present in patients who are stupid and demented is undoubtedly usually due to general vascular relaxation and the flaccidity of muscular tissue. Her statistics rather show that dysmenorrhœa when it occurs in the higher forms of insanity is frequently of central rather than of peripheral origin. Treatment directed to the relief of pelvic disease is indicated in the majority of the cases so afflicted, not to cure the mental malady but to make the road to recovery easier. The reflex as well as the direct strain upon an enfeebled nervous system should be removed if possible. Furthermore while neither rational medicine nor the result of operations reported thus far, would indicate the wisdom of widespread radical measures it is yet important to realize the fact that insane women do suffer physically and are entitled to relief possible to sane women in similar conditions.

BRAIN LOCALIZATION ERRORS.—Aldibert reports (*Amer. Medico-Surg. Bull.—Medical Standard.*) a case of brain tumor in a 77-year-old woman which made its seeming onset with an attack of Jacksonian epilepsy beginning in the upper extremity, followed by paralysis of the same arm two weeks later. One month later the epilepsy attacked the lower extremity of the same side, and was also followed by paralysis. Epileptic movements of the face without paralysis began two months after the first attack. These symptoms indicated a lesion in the middle third of the ascending frontal convolution, spreading both upward and downward.

An operation was performed, but no lesion found at this point. After temporary improvement of the symptoms, death ensued. Autopsy showed that the tumor was situated at the base of the two first frontal convolutions, with atrophy from pressure of the pre-Rolandic convolution, changes which should have led to affection of the face first, and of the leg last.

LOCOMOTOR ATAXIA.—A new sign in locomotor ataxia is lack of pain when violent compression of the ulnar nerve is made, although the usual tingling of the finger is felt. This condition is present in seventy-five per cent. of my

cases and occurs in no other form of organic disease that may be mistaken for tabes.—BIERNACKI.

GLYCOSURIA AND NERVE STRAIN.—Dr. Worms (*Bulletin de l' Academie de Medicine*) found seven per cent. of glycosurias in one hundred brain workers of sedentary habits; five per cent. were grave.

HERPES ZOSTER CAUSED BY MENTAL DISTURBANCE.—Mr. Antony Roche (Lancit). A woman had suddenly received news that her husband had been ordered to India; the next morning herpes was noticed on her left side. A left-side herpetic eruption appeared on an old man, some hours after he learned that a firm, in which he was interested, had failed. Herpes developed in a woman on the day after she had been much distressed by the sudden illness of her son. A girl, 6 years old, of remarkably equable temperament had been disobedient, and sent to bed; she cried very much, and the next morning herpes was noticed on her left side. In the last case the herpes was ascribed to the grief of a woman at the parting from her son.

PSYCHOTHERAPY.

PATIENTS CURED IN IOWA HOSPITAL.—More than one half of all the patients who make a good recovery are those who have been brought to the hospital within three months of the beginning of the mental derangement, and three-fourths of the recoveries are in patients who have been insane less than a year before coming to the hospital. Three-fourths of all the patients who fully regain their mental faculties at the hospital do so during the first six months of treatment in the institution.

RECOVERIES IN NEW YORK.

In the nine New York state hospitals for the insane last year, the average per cent. of recoveries was as follows: On patients admitted, twenty-two; on the daily average population, nine; on the whole number treated, six; and on

the number discharged, thirty-six. In this hospital the corresponding percentages of recoveries were twenty-six, eleven, eight and thirty-five. Believing that the criterion is a good one and that the figures have been correctly made, we conclude that this hospital is accomplishing its purpose well.

RELATION OF SEX TO RECOVERY.

The proportion of women who recover is greater than that of men. This result is chiefly due to the fact that the causes of insanity in women are oftener of the kind which can be removed by treatment.—*Dr. Gresham H. Hill, Report of Iowa Hospital for Insane.*

DISSIMULATION IN THE INSANE.—Larroussine (*Progrés Méd.*,) states that dissimulation is most common in the severe and dangerous forms of insanity. Victims of chronic persecutory delusions conceal their thoughts in order to be able to work vengeance on their supposed enemies; other lunatics do so in the belief that their own interests will be thereby advanced, or, and especially in women, they are led to deception by a sense of shame. This dissimulation in the insane is not necessarily limited to their own interests, for they may cause other patients to be as secretive as themselves. The dissimulators most inimical to society are those subject to chronic persecutory mania. Great caution should be observed before allowing these patients to leave the asylum.—*American Medico-Surgical Bulletin.*

MENTAL SYMPTOMS IN BODILY DISEASES.—Reynolds (*Brit. Med. Jour.*, Sept. 28, 1895) says, intense depression accompanies, and sometimes follows, various fevers. In the paroxysmal periods of epilepsy, depression and hypochondriasis are often marked features; and the after effects of poisons, such as cannabis indica, opium, alcohol, and carbon bisulphide, are those of depression. Alcoholic paralysis is accompanied by great depression, especially in women.

Mental dullness is found in cerebral tumor, in intense headache, in phthisis, in cyanotic states, in disorders of the liver, such as cirrhosis and cancer, in cancer of the stomach, and especially in myxedema.

Irritability of temper is especially common in two diseases; namely, phthisis and diabetes. Feelings of terror occur in hydrophobia, delirium tremens, and possibly in chorea and Graves's disease.

Insanity may be found in cerebral hemorrhage or softening, and may take the form of acute mania, or there may be melancholia or mere simple-mindedness, lapsing into complete dementia, some of the early acute maniacal cases recover after a few days or weeks. In the majority of chronic hemiplegics the mental symptoms consist of slight emotional changes, slowness of comprehension and judgment, and slight loss of memory.

In cerebral tumors, mental symptoms, as a rule, come on late, and may be those of steadily progressing dementia, of melancholia, or of hallucinations with maniacal excitement.

Occasionally one meets with insanity in valvular disease of the heart. It is sometimes impulsive in nature, as in two aortic cases who both suddenly committed suicide by jumping from heights. More frequently it takes the form of delusions of suspicion and persecution, and a similar condition may be seen in lung affections associated with dyspnea and cyanosis, the symptoms generally beginning or being chiefly present at night.

In the terminal stage of gouty kidney, there may appear a wild delirium, or more commonly a noisy acute mania, with possibly homicidal impulse and delusions of persecution and poisoning, the immediate friends being often the subjects of attack.

Among the diseases caused by germs we find a comparatively large amount of mental disease. Very rarely pneumonia is accompanied by true acute delirious mania (to be distinguished from delirium tremens, so commonly seen in the pneumonia of alcoholics). After pneumonia and typhoid fever, a stuporous demented condition, or a melancholia with delusions of suspicion and poisoning, may occur, these cases almost variably recovering in a few days or weeks. Influenza may set in with very acute mania, with great excitement, delusions, and hallucinations, recovery

occurring, as a rule; or there may be suicidal attempts in the early stage; after influenza, melancholia may set in; less frequently, mania.—*American Medico-Surgical Bulletin*.

THE VASO-MOTOR NERVES OF THE HEART.—By W. T. Porter, M. D., (*From the Laboratory of Physiology in the Harvard Medical School*). The stimulation of the cardiac end of the vagus nerve causes a primary constriction of the coronary arteries of the heart.

Method.—An etherized cat is bled from the left carotid artery. The innominate and the left subclavian arteries, the inferior vena cava and the azygos vein are ligated; and canulas are placed in the superior vena cava and the thoracic aorta. The heart is washed out with warm, defibrinated, oxygenated sheep's blood. The animal is now put in a warm chamber, capacity 2.1 cubic metres, and the aortic canula connected with a Mariotte's bottle, containing sheep's blood and standing 140 centimetres above the heart. The temperature of the warm chamber and the blood reservoir is about that of the body. When the cock in the tube connecting the Mariotte's bottle with the aorta is opened, the contents of the latter are placed at a pressure of 140 centimetres (blood), and the semilunar valves are thereby instantly closed. The blood can then leave the aorta only through the coronary arteries. It passes through these vessels into the right auricle and escapes through the canula in the superior vena cava. A glass tube attached to this canula and placed with its free end slightly lower than the heart acts as a weak siphon and assists the outflow from the auricle.

If the coronary arteries are now constricted, less blood will flow through them into the right auricle, and the quantity escaping through the outflow tube will therefore be diminished.

EXPERIMENT II, January 4, 1896. A cat prepared by this method was placed in the warm chamber, and the coronary arteries fed with sheep's blood. The blood escaped in drops from the canula in the right auricle. The cardiac end of the left vagus, two centimetres above the first rib, was stimulated for fifteen seconds with a Du Bois-Reymond

induction coil. The weak current employed altered neither the frequency nor the force of contractions so far as could be told by careful inspection of the heart. The stimulation continued fifteen seconds. The outflow in the fifteen seconds preceding stimulation was 13 drops; during stimulation it fell to 8 drops; thirty seconds after stimulation, the original rate was restored, 13 drops again escaping during fifteen seconds. Repetitions of the experiment at intervals during more than half an hour gave the same results. For example, an outflow of 14, 11, 13 drops per fifteen seconds was reduced to respectively 5, 4 and 4 drops.

EXPERIMENT III, January 4, 1896. Cat as before, except that the roots of both lungs were ligated. Outflow again 13 drops in fifteen seconds. On stimulating the cardiac end of the left vagus for fifteen seconds, two centimetres above the first rib, the ouftlow was reduced to seven drops. After stimulation the former rate was quickly regained. The strength of current employed did not alter the frequency of the heart-beat.

On cutting a long slit in the right ventricle and stopping the auricular canula, the blood from the coronary vessels flowed out of the ventricular opening. The quantity escaping during a stimulation of fifteen seconds was about one-half that collected during the same period before stimulation.—*Boston Medical and Surgical Journal.*

EDITORIAL.

[*All Unsigned Editorials are Written by the Editor.*]

Pasteur the Immortal.—Our confrere Journalists in France have not yet ceased eulogizing the deceased scientist, nor has the world yet discontinued the decoration of his grave with verbal flowers of appreciative memory.

Louis Pasteur* cultivated and triumphed in the sciences upon which medicine builds best for the welfare of man, and though he was only the great scientist working without the profession, it has been through medicine that his triumphs were made most effective to mankind and most appreciated by the world, so that when the life light of Louis Pasteur went out, medical men all over the world mourned and missed the light he was throwing on their pathway, as the planetary system would miss the sun's rays when extinguished. The light he gave then illumines forever, but the new light he was giving and the light medicine was yet looking for from this great scientist was to shine no more for them forever. He had discovered for science a new world and given to clinical and preventive medicine broader and more exact scientific basis and both looked constantly for new light and new discovery.

He was the benefactor, too, of the business world. The wine, beer and vinegar industries and the silk worm culture, felt the force of his scientific benefactions, just as he had extended the discovery of Jenner into cultures of other contagia and made attenuated preventive cultures of anthrax of charbon, the animal choleras, splenic fever and hydrophobia, saving the lives of millions of animals and robbing rabies of its terror to man. He was the practical scientist and the typical savant combined. He worked for practical ends and for the pure love of science. Studious,

*Born in 1822 of poor parents, he was a self made man. He began his early schooling as a poor pupil—a tanner's son—continuing as a tutor at Besarcon, a student of the French normal school and assistant to the chair of chemistry at Strasburg. At the latter place, he imbibed his love for the sciences which afterwards made him famous.

laborious and trustful of the utility of patient scientific research, and content "to labor and to wait" for results, he faced and fought "a frowning world" in his early achievements, until victory crowned him with Fame's imperishable laurels.

His discoveries in fermentation and its micro-organism was equal to Newton's law of gravitation in another field of science.

Pasteur killed spontaneous generation and invested with a new life and interest chemico-biological science and all associate science.

In the new world of science which he created for himself, he was a god, and though not a physician, medicine has proclaimed him a thing worthy of all homage.

Louis Pasteur has added new lustre to France, ineffable glory to science and everlasting honor to medicine. Notre Dame has no name more illustrious among her illustrious dead, than that inscribed there on the twenty-eight of last September, Louis Pasteur, the immortal.

Dr. E. C. Mann, author of Medical Jurisprudence of Insanity, of New York city, has been appointed honorary member of the Imperial University of Kharkoff, Russia, and associate member of the Society Medico-Psycologique, Paris.

Business Before Pleasure.—Over the portal of the Law and Medical Department of the old University of Bologna, Italy, appears the following:

"Dum ægrotus visitatur.
Et processus ventilatur,
Cura te accipere;
Nam ægroto restituto,
Et Processu obsoluto,
Nam curet solvere."

A Brooklyn lawyer translates it, thus:

"While abed the sick man's lying,
While the client's cause you're trying,
That' the time to get your fee!
For when the patient has recovered,
And the law suit's won and smother'd
No one then will care for thee."

—Extract from a letter to the North Carolina Medical Journal, in Texas Medical News.

The Journal of Experimental Medicine will appear in January, 1896, as a periodical devoted to original investigations in Physiology, Pathology, Bacteriology, Pharmacology, Physiological Chemistry, Hygiene and Medicine.

The journal will be of high character and truly representative of scientific medicine in this country.

Dr. William H. Welch, Professor of Pathology in the Johns Hopkins University, is to be the editor of the new journal and with him will cooperate a board of twelve associate editors, embracing eminent names in Physiology, Pathology, Pharmacology and Medicine.

Papers for publication may be sent to the editor, Dr. William H. Welch, 935 St. Paul St., Baltimore, or to any of the associate editors in the department to which the paper belongs.

The subscription price will be \$5.00 per volume. Subscriptions may be sent to the publishers, Messrs D. Appleton & Co., New York, or to Mr. N. Murray, Johns Hopkins University, Baltimore.

Dr. Weller van Hook has been elected professor of surgery in the Polyclinic Medical School and Hospital of Chicago.

Railway Surgeon's Neurology.—Chief Surgeon Outten, editor in chief of the Railway Surgeon, makes the following pertinent remark on this subject in his able conducted journal:

There is a commanding necessity for the surgeon who treats traumatism, and particularly for the railway surgeon, to be well informed not only surgically, but neurologically. If he would be effective in the treatment of these varied conditions it cannot be by being only partially educated. For many years the comparison of the knowledge of the nervous system possessed by the surgeon to that possessed by the neurologist has not been creditable to surgery, and it has been frequently demonstrated that when the surgeon invades a neurological field his knowledge is almost *nil*. Honorable neurologists and surgeons deplore this, for all competent men know that there should never be any narrow, prejudiced views upon a scientific subject, and that the reconciliation of diverse views can only come with competent knowledge. Ignorance is always either hard to convince or credulously simple.

It has been a common subject of remark, and has been justly noted in contemptuous tones, that not infrequently a railway surgeon would controvert the neurologist in every point without even seeing the case in question or preparing himself properly upon the subject. For instance, a neurologist has treated a case for months, and has studied its every etiological factor, but one examination made by a

poorly posted surgeon is deemed sufficient to upset honest, competent opinion. The railway surgeon should never at any time permit himself to be placed in any position to attempt to controvert scientific truth; his study should at all times be ready to stoutly uphold and defend truth. He should commit no injustice himself, nor permit others to do so. In regard to the influence of trauma neurologically Gray says: "Existing medical knowledge will not permit us to say that there is any one disease of the human body that cannot possibly be caused by injury, except possibly one of an infectious nature." We find that trauma may be more or less the cause of such nervous troubles as neuralgia, neuritis, myelitis, poliomyelitis, spinal hemorrhages (both extra and intra medullary), cerebral hemorrhages, progressive muscular atrophy, locomotor ataxia, disseminated sclerosis, syringomyelia, paralysis, epilepsy, tetanus, chorea, hysteria, neurasthenia, coma, paralysis agitans, Meniere's disease, paralytic dementia, insanity and a host of others.

This enumeration is certainly sufficient to indicate that the surgeon should be educated in neurological science. It is reasonable to maintain that in order that the surgeon of traumatisms be properly efficient he must be both surgeon and neurologist. Neurology is a broad field, but without a working knowledge in this direction the surgeon's efficiency will be sadly limited.

The possession upon the part of the surgeon of a neurological knowledge is demanded in the best interest of the patient, and the proper study of neurology will insure that justice will be done to all concerned and remove a contumely which now rests upon the surgery of traumatisms. All neurologist are in rapport with Dr. Outten.

Napoleon's Notions on Insanity.—He defined harmless madness to be a vacancy or incoherence of judgement between just perceptions and the application of them: "An insane man eats grapes in a vineyard that is not his own; and, in reply to the expostulations of the owner, says:—'Here are two of us; the sun shines upon us; then I have a right 'to eat grapes.' The dangerous madman was he in whom this vacancy or incoherence of judgement occurred between perceptions and actions: it was he who cut off the head off a sleeping man, and concealed himself behind a hedge, to enjoy the perplexity of the dead body when he should awake."—Journal of the private life and conversations of the Emperor Napoleon at St. Helena, by The Count De Las Caseo.—Vol. 1.—Part 2.—1823.

Foreign Medical Journals note the overcrowding of the profession with specialists in all the cities. "The plain drift of opinion," says an exchange, "is that the specialty of being a specialist in one direction is working its own death, and rendering medicine more and more of a study in which one must begin with knowledge in many directions, and then gradually follow one's bent, if success is to be attained as it was from ten to twenty years ago."

The best way to make a good and successful specialist is to deserve and obtain a good general practice and then begin and continue your special work by exchanging your cases.

The College and Clinical Record will be hereafter known under the name of "*Dunglison's College and Clinical Record: a Monthly Journal of Practical Medicine.*"

Dr. Henry W. Coe, Medical Sentinel, notes the pleasing fact that our friend, Dr. I. N. Love, of St. Louis, has been presented with a watch. As the original Chutmuck, the real organizer of this unorganized society, he has always declined to carry a watch, because in so doing he feared he would become "a slave to time." On his return from Europe, he was greeted by some of his fellow Chutmucks in Detroit at the meeting of the Mississippi Valley Medical Association, and that he might carry a memento of their appreciation next to his heart, an elegant gold watch was presented to him. The watch had engraved upon it the monogram of the Chutmuck, four B's, with the words, "To the Chief of the Chutmucks, from his Loyal Braves." For fear that some of our readers may not know what a Chutmuck is, we might quote the language of its chief:

The development of this order followed naturally on the principle that good people get together just as water seeks its level. The Chutmuck, be it known, is generous, and "*sui generis.*" * * * He knows only and believes firmly that of all men in all the earth the born Chutmuck is the best. There are Chutmucks and Chutmucks. Those who are born Chutmucks and those who married into the Chutmuck family. By association, the latter eventually become real Chutmucks; but the born Chutmuck can be recognized at sight. His credentials are four B's. Brains which direct him; a Backbone which controls him; Blood, a rich and generous blood, wherein the red blood corpuscles are largely in excess of the white and where they go merrily coursing through his circulatory system, carrying joy, gladness and good cheer; the fourth B stands for Beauty, the beauty of character which attracts friends and holds them tenaciously and helps them.

Princess Topaze.—The *Scientific American* for January 11th, has an engraving of the little Princess Topaze and her little carriage, taken from the *Illustrirte Zeitung*.

The princess is a tiny dwarf born of normal parents near Paris in 1879.

"She charms those who go to see her, not only by her attractive appearance—for although so small, she is perfectly formed—but also by her vivacity and intelligence. She has some skill as a prestidigitator and mind reader, to which accomplishments she adds those of singing charming little songs and dancing the serpentine and other dances. She is only about 23½ inches tall and weighs only 14 pounds. She has her own gala turnout, which resembles a perfectly appointed doll's carriage."

The Standard Dictionary Publishers call our attention to the following which we publish in our pages as a matter of justice to a great work and as our protest against a great wrong:

A very grave wrong is being perpetrated against the American public by a reprinter of one of the English competitors of the Funk & Wagnalls Standard Dictionary—a wrong that cannot be excused by the exigencies of commercial rivalry. As is well known, in all unabridged dictionaries it is necessary to give the definitions of certain indelicate words. Eighteen of these words (selected out of a vocabulary of over 300,000 terms in the Standard) have been collated and printed with their definitions by the reprinter of this English dictionary, and circulars containing them are being distributed among teachers, school trustees, and parents all through this country, stirring up a filthy agitation that will end, unless frowned down by the public press and other leaders of public opinion, in setting people of prurient minds and children everywhere to ransacking dictionaries for this class of words. One of these publications contains such outrageously unjust comments as the following:

"About two years ago the publishing house of Funk & Wagnalls brought into the world a monstrosity entitled the Standard Dictionary of the English Language."

"So far as relates to its collection of obscene, filthy, blasphemous, slang, and profane words, it has no counterpart in dictionaries of the English Language."

It is but fair to the press and scholars of England to say that the English critics have in no way seconded this unfair assault, but are unanimous in the most unqualified indorsement of the American work, the Standard Dictionary, expressing in many ways the same opinion as that of the *St. James's Budget* [Weekly edition of the *St. James's Gazette*], London, which said:

"To say that it is perfect in form and scope is not

extravagance of praise, and to say that it is the most valuable Dictionary of the English language is but to repeat the obvious. The Standard Dictionary should be the pride of literary America as it is the admiration of literary England."

The utter insincerity of this attack on the Standard is seen in the fact that nearly every one of these 18 words is in the English work which is published by this reprinter, and it contains other words so grossly indelicate and withal so rarely used as to have been excluded from the Standard and from nearly all the other dictionaries. Fifteen out of the eighteen words (and others of the same class) are, and properly so, in the Century Dictionary, and they are to be found, with scarcely an exception, in every other reputable unabridged dictionary, and this class of words is invariably recorded in the leading dictionaries of all languages.

Since this gross attack has been made, we have submitted to Charles A. Dana and to a number of well-known educators the question whether we committed an error in admitting into the Standard this class of words. The answer has been without an exception, "You did not."

The fact is, extraordinary care was used by the editors of the Standard "to protect the language." Of the more than 500,000 words collected by the hundreds of readers employed to search all books of merit from Chaucer's time to the present, over 200,000 were excluded wholly from the vocabulary; hence there was no need and no effort to pad the vocabulary. The rules of exclusion and inclusion were most carefully made and rigidly enforced. A most perplexing problem from beginning to end was how to reduce the vocabulary, not how to enlarge it. Compression was carried by many devices to the extremest degree. The editors who passed upon the admission of words numbered over one hundred of the best known writers and scholars in America and England. To accuse such men of "filthiness" is to do a wrong of the gravest degree. It is the business of a dictionary to record words, not to create, nor to destroy them; to answer inquirers concerning the spelling, pronunciation and meaning of all words that are used to any considerable extent, not to obliterate those it does not fancy. Whether a word has a right to exist or not, the final arbiter is the people, not the dictionary. The dictionary, as says Trench, should be the inventory of the language, and, as says the Encyclopedia Britannica under the term DICTIONARY, it "should include all the words of the language" ** A complete and Standard Dictionary should make no choice. Words obsolete and newly coined, barbarous, vulgar, and affected, temporary, provincial, and local, belonging to peculiar classes,

professions, pursuits, and trades, should all find their place,—the only question being as to the evidence of their existence,—not indeed, all received with equal honor and regard, but with their characteristics and defects duly noted and pointed out.”

Improper or indelicate words, when it was found necessary to admit them into the Standard, were blacklisted as *low*, *vulgar*, *slang*, and printed in small type. It did not seem to the editors that an unabridged dictionary could go further without justly incurring blame.

To collect from such a work words of the class referred to and publish them is as great an outrage as to collect from the Bible the indelicate words and passages to be found there, or those from Shakespeare (some of there 18 words are found both in the Bible and in Shakespeare), and then to print and scatter abroad the collection, saying: See what a foul book is the Bible; see what an obscene and blasphemous work is Shakespeare.” The publication and distribution of these circulars is a gross assault upon public decency. An agent who attempts to exhibit such a printed circular surely should not be listened to for a moment; he is a public enemy, and should be turned from every decent door.

The old story will be remembered of a woman accosting Samuel Johnson, shortly after his dictionary had been published, with, “Doctor Johnson, I am so sorry that you put in your dictionary the naughty words.” “Madam,” retorted the Doctor, “I am sorry that you have been looking for them.”

Respectfully,
I. K. FUNK.

Trained Nurses to Travel with Insane Patients.—The Yankton, South Dakota, Asylum, sends trained and uniformed nurses to attend patients about to be taken to the asylum. The plan works well of course. The New York Lunacy Commission has made the same provision for all patients sent to the New York Hospitals.

This is as it should be. It is a judicious safeguard against accidents from inadvertence of the inexperienced attendant.

Many lives of the insane would be saved in transit from homes to asylum and *vice versa* if this were the universal practice.

The insane are shrewd, suspicious and often full of morbid impulses which the inexperienced physician or attendant never suspect.

It would be wise to always have an experienced attendant upon the insane and when practicable a young alienist physician accompany all Melancholics on there travels even when not going to or from a hospital for the insane.

Only those who have been much with the insane can understand insanity well even in its (so called) milder aspects which are often its gravest phazes. Attendants who care for the insane on general principles, like experts who reason out for courts and juries what insanity ought to be on general principle do not always know it themselves, but they are "expert egoists and psychiatric failures." We must live with the insane, as Equirol long ago said, or have a similar experience to fully comprehend and instruct others what insanity is, or to treat it best.

Tri-State Medical Society.—At the last meeting of The Tri-State Medical Society (of Iowa, Illinois and Missouri) the following officers were elected:

President, Dr. Robt. H. Babcock, Chicago; 1st Vice-President, Dr. A. H. Cordier, Kansas City; 2d. Vice President, Dr. W. A. Todd, Chariton, Ia; Treasurer, Dr. C. S. Chase Waterloo, Ia; Secretary, Dr. G. W. Cale, St. Louis.

The next meeting will be held in Chicago the first Tuesday, Wednesday and Thursday, in April, 1896.

The Association of Assistant Physicians of Hospitals for the Insane.—The second meeting was held at the Michigan Asylum for the Insane, Kalamazoo, on October 24, 1895. The membership, originally composed of medical officers of the staffs of asylums of Michigan, Illinois, and Iowa, was extended to include the assistant superintendents and assistant physicians of all asylums. The next meeting will be held at the asylum at Independence, Iowa, in May, 1896.

A good move; as it will bring the assistants of these institutions in closer communication with each other and enable them to combine recreation with mutual instruction.

The assistants need relaxation and vacation as well as the superintendents.

The Case of Miss Lanchester.—The case in question has attracted a great deal of attention in England, and been the subject of comment in both the medical journals and the daily papers, especially in connection with a pronounced tendency to social radicalism in much recent English fiction. In brief, the case is that of a young lady who for some time had been living an independent life,

who made up her mind that women should be emancipated, and had openly declared her intention of disregarding social rules and living with a man below her in station. Such conduct was considered by her parents as evidence of insanity, and they wished to save the lady from her own act. The lady was forcibly seized by her relations after having been seen, and certified as of unsound mind, by a leading physician; and on an urgency order she was taken to an asylum. She was seen by the Commissioners, who, according to one evening paper, expressed regret that they could only advise the lady but could not control her acts. They were convinced that her symptoms did not represent any definite mental disease, and that therefore they must order her discharge. No complaints of any kind are made against the asylum. The point remains for consideration, whether the physician was justified in signing a certificate of lunacy under the circumstances.

In commenting upon the case the *British Medical Journal* says editorially:

It is possible that the conduct of Miss Lanchester appears to be highly unreasonable; but everything depends upon the way in which a change in character has developed. No one will deny that the disregard of moral and social laws is among the earlier symptoms of insanity; therefore, if a person who has always led a strictly conventional life suddenly gives rein to his feelings, we are prepared to watch for other symptoms of loss of control. If, on the other hand, the change in character and in acts follows a slow course of development which bears a direct relationship to the surroundings, it cannot be considered or treated as disease.

It would be a reversion to the long past to treat individual disregard of social conventions as criminal or lunatic. Dr. Blandford, who gave the first certificate, is an alienist physician of long experience, eminence and high character. He studied at Oxford and graduated M. A. and M. D. in 1854, when this distinction was rarer than it is now. He is lecturer on psychological medicine at St. George's, and the author of the article "Insanity" in Quain's *Dictionary of Medicine* and has filled more than one high office in his department of medicine.

All who know Dr. Blandford are certain that he has been influenced solely by conscience and conviction as to the act he performed in signing an urgency order. We feel very strongly, however, that the urgency order is a very powerful weapon which must not be used recklessly, or it may be distrusted by the public. It is a most valuable means for rapidly placing very violent patients under control, but it is not intended for the speedy removal of persons who may have followed a course of conduct offensive to the opinion of their relations.

With the statement that individual disregard of social conventions should not be regarded as evidence of lunacy

we must certainly agree. Moreover, such a disregard of social conventions as this young woman expressed to her father and brothers her intention of indulging in, namely, cohabiting with a man whom she refuses to marry, would not be regarded in England as illicit or criminal. In this State fornication is against the law, and is liable to punishment as such.

In committing her under the lunacy act Dr. Blandford states that he was partially actuated by the fact that there was insanity in her family. Other considerations which influenced him were the following:

She had always been eccentric, and had lately taken up with Socialists of the most advanced order. She seemed quite unable to see that the step she was about to take meant utter ruin. If she had said that she contemplated suicide a certificate could have been signed without question. I considered I was equally justified in signing one when she expressed her determination to commit this social suicide. She had a monomania on the subject of marriage and I believed that her brain had been turned by Socialist meetings and writings, and that she was quite unfit to take care of herself.

Miss Lanchester is the product of the same sociological tendencies and movements as produce writers of and a public for such books as "The Woman Who Did" and "Jude the Obscure."

The Boston Medical Journal makes the above reference and quotation regarding this erratic and neuropathic young woman and the Marquis of Queensberry approves her conduct.

As to her sanity the Marquis, *The British Medical Journal* and our distinguished journalistic contemporary of the Atlantic seaboard are in harmonious concord. Witnesses enough to convict the poor girl of sanity before almost any court of law and of immorality before any tribunal of morals. But the sequel of this case, if followed long enough and far enough, coupled with careful inquiry into the girl's health and heredity, will probably reveal that Dr. Blandford's certificate as to her mentally unbalanced condition, is correct.

The incubative stage of mental disease does just such streaks as these and the journalist of general medicine is not generally expert enough in the clinical symptomatology of prodromal insanity to gainsay the correction of the psychiatric clinicians of well earned repute for judicial minded accuracy of judgement, such as Blandford and Maudsley have earned in such cases. When a girl so suddenly and impulsively ignores the proprieties of her station and environment as to commit the social suicide of a publicly proclaimed

unlawful cohabitation with a man her social inferior and whom she refuses to marry, simply for the purpose of maintaining an idea, the strong presumption of such conduct so unaccordant with her rearing, family connections, natural feelings and the moral sentiment of the community and age in which she lives, the suspicion of mental derangement is strong and Blandford did well to save her with the benefit of the doubt as to her sanity.

Insanity begins often in such monomaniacal impulsions to impropriety unnatural to the individual and out of harmony with environment and Miss Lanchester has certainly acted as though she were insane.

Apropos of the Increase of Specialists and the multiplication of specialties in medical practice we must go back to the old way of developing the special from the general physician. A true specialist is a higher evolution from the general practitioner and above the general plane of medicine. The best and the only way to make the best special practitioner is to first become familiar with the whole field and from that select, after due familiarity, your place for final work, but work the field over till you have found your natural bent.

Then you will have a general practice to select your patients from, and an influence and patients to exchange with other physicians similarly situated and selecting a different specialty from your own, and you will know how to make your special diagnoses in complicated cases by exclusion and how to treat, or recommend treatment for complications. In short, you will only then know how to practice medicine even though you confine your manipulations and treatment to a single locality, an organ or group of organs or organic system of the human organism.

It is the hight of unwisdom for a young man with but a cursory knowledge of medicine in general to select and work in a specialty alone at the beginning of his professional career. If he does this, he will make of himself only a one idead spot specialist and the profession will sooner or later spot him as a practical failure. One should understand something of general nautical navigation even to manage a fishing smack.

The Medical Staff of the Army and Navy.—The *esprit de corps* of our Army and Navy, especially in action, depends largely on the efficiency of the medical staff, and its advancement to the highest state of perfection so "devoutly to be wished" by every patriot, will not be pro-

moted by a policy of inadequate recognition such as prevails in the army or of positive degradation such as exists in the Navy. The best medical men are the peers of the best officers and must be officially so considered to secure the best service in the field or on the sea. The fate of armies and the success of campaigns depends much on the medical providence of a competent medical service against the disasters of disease incident to march and battle (the fore and after care of sick or wounded, preventive measures against epidemics, etc.).

Medical men of ambition and high ability will not be content with the rank and badge of mediocrity in either service. If either Uncle Sam or Johnny Bull wish their soldiers or warriors well cared for and their fighting power thereby enhanced they must see that their medical men have rank, distinction and promotion like other officers.

The surgeon who calmly ministers to the wounded while the battle is on and the physician who braves the pestilence of the camp and the dangers of the march is as much a military officer and as much entitled to recognition as though he walked in the ranks or rode at the head of a column.

The degradation of the medical staff will not elevate the military service. Men who rank high in the medical profession for military medical skill will not accept the degradation and the service and mediocrity in medical service, and a degraded medical staff on either land or sea means inferior military efficiency.

Apropos of these our own convictions, and we have seen service in the army, we give the views of some of our editorial contemporaries.

We learn from our English contemporaries that the present head of the English army, Lord Wolseley, is inclined to carry out the policy toward the army medical service which was adopted by his predecessor, namely, that of snubbing and keeping down, whenever opportunity offers, the medical officers. At a recent inspection in Dublin, Lord Wolseley objected to the medical corps carrying swords, because, he said, they were only civilians.

The army officers do not seem to keep in touch with the spirit of the times, which tends constantly to bring into greater prominence the work of civilians, and to attract into civil life the best minds of every civilized country. In particular, the standard of education and intelligence in the medical profession is everywhere steadily rising, while we judge from the various exhibitions of the intelligence of army and naval services that these branches are not any longer drawing the best class of men into them. Yet, in the

apparently desperate effort to maintain the prestige of the army and navy, the officers do all they can by artificial regulation to keep down men who are, by education and natural intelligence, their equals, and perhaps their superior. We believe that in the end, the importance and social value of the medical service in our armies and navies will be recognized at their true worth, and meanwhile, we hope that the contest will be kept up until justice is secured."

—*New York Medical Record.*

Dr. Lett's Ontario Sanitarium, the Homewood Retreat for the Insane, is an excellent place for patients whom it is advisable to send a long distance from home to an entirely new scenery and environment. Guelph, Ontario, Canada, where Homewood Retreat is situated, is a delightful place and the institution is all it claims to be, while Dr. Lett, the Medical Superintendent, is an urbane gentleman, a scholarly physician and a master clinician in psychiatry, and this may be truthfully said of all of the institutions, and medical chiefs in charge of them, having a name and place in our advertising pages.

Dr. Eastman, of Topeka.—Justice is so seldom dealt to Asylum Medical Superintendents that the following words from the attorneys who came to prosecute are refreshingly hopeful of the ultimate triumph of justice towards the much abused and much suspicioned insane hospital superintendent.

A patient named Mauer was tripped by another patient and fell and broke his neck in consequence, and the public as usual sought to throw the blame for the fatality on the asylum superintendent, and this is what one of the attorneys for the prosecution said:

"As a friend of Mauer and the representative of his widow, I would like to say that after hearing Dr. Eastman's frank and honest testimony, I am assuredly convinced that under Dr. Eastman's management and personal supervision there would no wrong be done to any one. I am very agreeably surprised at the honest manner and earnest efforts in which the board of trustees have endeavored to investigate this matter, and I am very much pleased at the outcome of the affair. If you will publish a true report of this testimony you will see that the people of the state of Kansas will come to the same conclusion that I have and that under Dr. Eastman and this board the asylum will be a success and the people of the state of Kansas will give you credit for it."

Under all this just encomium, however, appears the

prevailing unjust distrust of insane hospital management, as appears in the very agreeable surprise expressed by the attorney "at the honest and earnest efforts of the Board of Trustees to investigate" the matter, as if there should be any other interest or motive than charity and justice in the management of a state insane hospital with their pecuniarily disinterested medical head and independent board of management.

There is no reason why the conduct of a state institution for the insane with its Board of Trustees and medical superintendent should not be as humane as if the state controlled the institution.

There is too much distrust abroad in the land in regard to these humane institutions, but this is because it is the nature of the friends and relations of the insane to be distrustful.

A Card.—The manufacturers of SENG send us the following which we take pleasure in publishing:

We have frequently received communications from physicians asking us to give the digestive powers of SENG in numerals.

As SENG is not an artificial digestant, but a digestive secerment, this is, of course, impossible.

We therefore desire to correct this erroneous impression with the statement that SENG, through its secerment action, encourages the flow of nature's own pepsin when taken into the stomach, and thus does not dissolve the food *per se*.

The physiological difference between the pepsin and SENG treatment is that the former is an artificial treatment, and a makeshift at best, whilst the latter is a restorer of the natural functions of digestion.

SULTAN DRUG CO.

The Pathology of Idiocy.—HAMMARBERG (*The Journal of the American Medical Association* Analyzing Hammarbergs "Clinical and Pathologic Studies concerning Idiocy, with Investigations into the Normal Anatomy of the Brain Cortex," Academic Thesis, Upsala, 1893) presents the following conclusions of this accomplished and lamented writer; An examination of the brain cortex of nine idiots, which include the principal forms of idiocy, it was possible to explain the psychic defects as due to a lack of cortical nerve cells capable of normal functions.

This absence of normal cells was found to be due, either to an arrest of the development of a greater part of the cortex at a stage corresponding to the embryonal, or to

that found in early infancy, or to the actual destruction of cells during the growth of the brain. In all cases it is made clear that at a certain time the normal development of the cortex became arrested.

The degree of idiocy is shown to depend upon the intensity of the acting cause, upon the extent and the functions of the cortex involved, and upon the time at which the arrest in development occurred. It is also demonstrated that certain abnormal cell forms as well as peculiarities in the arrangement of the cells in the cortex, which have been regarded as characteristic of the idiot, merit only a secondary importance. The essential moment in the production of the psychic defects of idiocy is the lack of cells capable of function.

In addition to the usual methods HAMMARBERG relied essentially upon a method of his own, by means of which he was able to determine with exactness the actual number of nerve cells in a cube of brain cortex 0.1 mm. in size, and before drawing any conclusions as regards the cortex of idiots, he carefully examined the cell arrangement, number size and structure in the various layers of the normal cortex. Preliminary investigations demonstrated that fixation and hardening in alcohol, cleaning in xylol, and embedding in paraffine resulted in the least actual artificial changes which were also constant in different brains and in different parts of the brain cortex. The pieces were then cut into serial sections, fastened on the slide and stained with methylene blue according to NISSL'S method. Counting of the cells in the various layers of the cortex was made throwing the positive picture of glass slide ruled into squares upon the preparation under the microscope in such manner that by means of an objective micrometer each space in the field was made to accurately measure 0.1 mm. square. The cells present in the same number of squares in ten serial sections, all of which 10 μ . thick, were then counted and the sum, divided by the number of squares counted in each section, would equal the number of cells in a cube of 0.1 mm. of cortical substance.

The Third International Congress of Psychology will be held in Munich on August 4, 5, 6 and 7, 1896. The programme of work is as follows:

1. Psychophysiology.—Anatomy and physiology of the brain and of the sense organs (somatic basis of psychical life)—the development of the nerve centres; the theory of localization and of neurons; paths of association and structure of the brain—the psychical functions of the central

parts; reflexes, automatism, innervation, and specific energies. Psychophysics: The connection between physical and psychical processes; psychophysical methods; the law of Fechner. Physiology of the senses (muscular and cutaneous sensibility, audition, light perception, *audition colorée*), psychical effects, of certain agents (medicines). Reaction times. Measurement of vegetative reactions (inspiration, pulse, muscle-fatigue).

2. Psychology of the normal individual.—Scope, methods, and resources of psychology; observation and experiment—psychology of sensations; sensation and idea, memory and reproduction—laws of association; fusion of ideas—consciousness and unconsciousness; attention, habit, expectation, exercise—perception of space (by sight, touch, and the other senses); consciousness of depth-dimension; optical illusions—perception of time—theory of knowledge; imagination; theory of feeling; feeling and sensation; sensual, æsthetic, ethical and logical feeling emotions; laws of feeling—theory of will; feeling of willing and voluntary action; expressive movements; facts of ethics—self-consciousness. Development of personality; individual differences—hypnotism. Theory of suggestion; normal sleep; dreams—psychical automatism—suggestion in relation to paedagogics and criminality; paedagogical psychology.

3. Psychopathology.—Heredity in psychopathology; statistics—Can acquired qualities be transferred by inheritance?—Psychical relations (somatic and psychic heredity); phenomena of degeneration; psychopathic inferiority (insane temperament)—genius and degeneration; moral and social importance of heredity—psychology in relation to criminality and jurisprudence—psychopathology of the sexual sensations—functional nerve-disease (hysteria and epilepsy) alternating consciousness; psychical infection; the pathological side of hypnotism; pathological state of sleep—psychotherapy and suggestive treatment—cognate phenomena: mental suggestion; telepathy; transposition of senses; international statistics of hallucinations—hallucinations and illusions; imperative ideas; aphasia; similar pathological phenomena.

4. Comparative psychology.—Moral statistics—the psychical life of the child—the psychical functions of animals—ethnographical and anthropological psychology—comparative psychology of languages; graphology.

Members who intend to take part are requested to announce the titles of their papers and to send short abstracts of the contents to the secretary's office, Max-Joseph Street 2, Munich, before the 15th of May, 1896. These abstracts will be printed and distributed among the audience.

The length of the papers or addresses at the meetings of sections is limited to twenty minutes. Members are desired to give the chief points of their speeches (on a form which will be provided) during or at the close of the meeting in order to insure a correct report.

The division of the sections will be arranged according to the papers or addresses which may be offered. The meetings will take place at the Royal University.

The languages used during the congress may be German, French English, and Italian.

The *Tageblatt*, which will appear in four numbers, will contain a register of the guests, also information as to accommodation, the programme of the papers and addresses and social arrangements, the list of members, and a short notice of the places of interest in Munich.

Information in regard to the programme of work will be given by the following members of the local committee: Psychophysiology—Dr. Cremer, Findlingstrasse, 10b/2, Munich. Psychology, etc.—Dr. Weinmann, Leopoldstrasse, 5, Munich. Psychopathology—Dr. Grashey, Auerfeldstrasse, 6/1, Munich. Comparative psychology—Dr. Georg Hirth, Luisenstrasse, 14/1, Munch.

Medical Corps of the Navy.—The *New York Medical Journal*, referring to the two bills recently prepared for the reorganization of the Medical Corps of the Navy now before Congress, neither of which give the medical corps of this arm of the military service a too exalted rank, justly concludes in conformity to the tenor of what we have just said that “it is evident that something must be done to make the naval medical service less repellent to young physicians than it has been for a long time.”

Dr. W. Gilmore Ellis read a paper on “Latah” before the Medico-Psychological Association of Great Britain and Ireland, November 21st, 1895, under the Presidency of David Nicolson, M. D.

Life-Like Illustrations of medical celebrities, procedures, etc., is fast becoming a feature of medical journalism. When our enterprising journalistic contemporary, Dr. I. N. Love, first introduced this advance innovation in his meritorious *Medical Mirror*, other journals that have fallen into line were disposed to criticize the pioneer of this proceeding as loud and sensational. But the medical world “do more,” and the captious laggard must move with it.

CORRESPONDENCE.

NEW YORK, Nov. 6th, 1895.

To the Editor of The Alienist and Neurologist.

My Dear Sir:—The October Number of the *British Journal of Mental Science*, in commenting editorially on the report of a committee of the Medico-Legal Society of New York, on the amendments proposed to the Law of Commitment of the Insane in the State of New York, says, speaking of the report:

"It recommends that no Order for the Commitment of a lunatic—reception order as we should style it—shall be made until after *a trial by jury*, at which the lunatic *must be present*, unless the Judge otherwise directs, and must be *represented by counsel*." And the article proceeds to characterize the report, and the action of the Committee as "Monstrous," "Grotesquely absurd," Preposterous," etc.

The article was written under an entire misapprehension as to the facts, and as to what the report contained.

No recommendations of the kind stated, were made in the report.

The report contained the amendment proposed by Mr. Albert Bach *in extenso* and the act of the legislature as it now stands on the statute books of the State.

Its reasons for refusing to approve of the act proposed by Mr. Bach, and the recommendation of the Committee, that a series of resolutions should be adopted by the Medico-Legal Society, as an expression of the sense of that body, which were subsequently approved by a very full meeting of the Executive Committee of that Society, and when brought before the Society at a regular meeting, appear in the following resolutions:—

"1. *Resolved*, That the present law is faulty in permitting any citizen to be committed and confined in an asylum, public or private, or in any institution, home or retreat for the care and treatment of the Insane, upon the mere certificate of two physicians under oath.

2. *Resolved*, That such a commitment made in this manner, before it has been approved by a court or judge of competent jurisdiction, is in direct violation of the organic law of the State, and of the United States.

3. *Resolved*, That the qualifications specified in the law, as it now exists, as to the competency of the certifying physicians, requiring only three years actual practice of his profession, and without requiring evidence of his experience in or practical knowledge of insanity, are entirely inadequate to protect the liberty of the citizen.

4. *Resolved*, That the statutory qualifications of the certifying physicians, as now stated in the law, would not be sufficient to enable said physician, to testify as an expert in a court of justice where the question of insanity was at issue.

5. *Resolved*, That in our opinion confinement of the insane in an asylum is not necessary, beneficial, or even prudent in all cases; and that before a judge signs a warrant of commitment, the law should require him to be satisfied, by competent evidence, that the insane person, if at large, would be dangerous to himself or others; or that treatment in an asylum would be beneficial to him.

6. *Resolved*, That in all cases of doubtful insanity, judges, before signing warrants of commitment for insane persons, should assign counsel for the alleged lunatic when he is not otherwise represented.

7. *Resolved*, That in our opinion in the matter of commitment of the insane, the duty of medical men should be limited to giving medical evidence, and the responsibility for the commitment should rest upon the judge, and not upon the physician; that the medical profession has greatly suffered in public estimation, by the practical working of the existing law, which throws upon the certifying physicians the opprobrium of unfortunate, or ill-advised commitment."

The Committee made no such report, as is stated in the *Journal of Mental Science*.

It, in fact, refused to recommend the amendments in that regard, as proposed by Mr. Bach, and it is difficult to imagine how such an error could have been made in a journal of such high character as the *Journal of Mental Science*.

I enclose, under separate cover, the full report of the Committee, and as the *Journal of Mental Science* is a quarterly, and no issue will appear for some time, in which the correction could be made in that journal, I deem it only proper to call your attention to the error to prevent its wider circulation unexplained. I remain, Dear Sir,

Very faithfully yours,

CLARK BELL.
Chairman of Committee.

IN MEMORIAM.

Dr. Warren Webster, a distinguished physician and retired army officer, and collaborator of this journal, died January 13th, of pneumonia, at the residence of Dr. Wm. H. Brooks, 1928 Linden avenue, Baltimore, Md.

Dr. Webster was born at Gillimanton, New Hampshire, in 1835. After graduating from Harvard, he pursued his medical studies in Paris. On his return to this country he entered the army as a surgeon. For gallant and meritorious conduct at Chancellorsville, Va., he was made major. He served through the civil war and was breveted lieutenant-colonel for distinguished service during the cholera epidemic in New York, when he volunteered to take charge of the hospitals on Hart's and David's Islands. He was retired in 1889.

For years he had been a highly valued contributor to this and other medical periodicals.

He translated from the German "The Sympathetic Diseases of the Eye," by Ludwig Mauthner, which has been widely commended by the medical profession.

The body was interred in Hayehill, New Hampshire.

Dr. Webster was an accomplished physician and an urbane and scholarly gentleman. He was possessed of a kindly nature and the warmest of hearts, and noted for the fidelity of his friendships. We shall sadly miss him.

REVIEWS, BOOK NOTICES, ETC.

THERAPEUTIC NOTES, Published by PARKE, DAVIS & COMPANY is entertaining reading for any physician and can not fail to bring the busy practitioner of medicine in closer touch with this enterprising company.

The following table of contents will confirm what we say:

Editorial Notes, A Word of Assurance, The Present Status of the Antitoxin in Treatment of Diphtheria, Innocuous Injections of Nuclein, Toxins and Antitoxins of Erysipelas for the Treatment of Inoperable Malignant Tumors, Therapeutic Employment of the Suprarenal Gland, Sorry but unable to Assist, Euthymol Tooth-paste—Antiseptic and Deodorant, The Manufacturing Pharmacists, Bronchial Sedative for the Treatment of Bronchial Inflammations, Amylaceous Indigestion, and its Treatment, Taka-Diastase in the Treatment of Dyspepsia, An Ideal Representation of Cinchona Bark, Deep Hypodermatic Injection, The Nuclein Treatment of Tuberculosis, Notes on Nuclein, An Excellent Remedy for Starch Dyspepsia, A New Nasal Tablet, The Woodbridge Treatment, The Woodbridge Treatment in Typhoid, Diastase, A Clinical Chorus on Taka-Diastase, Atropine Sulfate for Dilating the Os Uteri, Subcutaneous Injections of Camphor in Therapeutics, Saw Palmetto in Gonorrhoea, Fluid Extract Cedron Seed in Venomous Bites, Lactophenin: Antipyretic and Analgesic, A Case of Laryngeal Vertigo, Typhoid Fever—Hot Flashes—Gastralgia, Cimicifuga (*Macrotys*) Racemosa in Diseases of the Eye.

P. BLACKISTON, SON & CO., of Philadelphia, announce a book on "Appendicitis," by John B. Deaver, M. D., Assistant Professor of Applied Anatomy, University of Pennsylvania. It will contain about forty illustrations of methods of procedure in operating, and typical pathological conditions of the Appendix, the latter being printed in colors.

Four Cases of Mixed or Irregular Forms of Multiple Neuritis in which Paraplegia was the Most Prominent Symptom in three, and a Condition Simulating Hemiplegia in the Fourth. By J. T. Eskridge, M.D., Neurologist to the Arapahoe County and St. Luke's Hospitals.

Traumatic Separation (Compound) of the Lower Epiphysis of the Femur. By A. H. Meisenbach, M.D., St. Louis, Mo., Professor of Surgery in the Marion Sims College of Medicine.

Alcohol as a Therapeutic Agent in Ear Diseases. By W. Bolck, M. D., translated from the German, with comments and additions, by Samuel Robert Dunlop, M. D.

Investigation of Tumor Formation with a View of Developing the Therapeutic Rationale of Certain Toxins in Cancer. By G. Wiley Broome, M.D., St. Louis, Mo.

Familiar Types of Insanity.—Their Diagnosis. By John Punton, M.D., Kansas City, Mo., Prof. of Nervous and Mental Diseases, University Medical College, Etc.

Urethroscopy in Chronic Urethritis—The Largest Catheter Always. By Fred C. Valentine, M.D., New York, Genito-Urinary Surgeon West Side Dispensary, Etc.

Various Fractures: Simple and Compound, a Clinical Report of Fifteen Cases. By Thomas H. Manley, M.D., Visiting Surgeon to Harlem Hospital, New York.

The Early Recognition of Carcinoma of the Cervix. By Hunter Robb, M. D., Professor of Gynaecology, Western Reserve University, Cleveland, Ohio.

State Provision for Epileptics. By William Francis Drewry, M.D., of Petersburg, Va., First Assistant Physician Central State Hospital, etc,

Probable Septic Phlebitis of the Left Sigmoid Sinus. By J. T. Eskridge, M.D., Denver, Col., and Edmund J. A. Rogers, M.D., Denver, Col.

Removal of Ingrowing Toe-Nail.—A Simplified Operation by Means of a New Instrument. By A. H. Meisenbach, M. D., St. Louis, Mo.

Observations on Mental Affections in Children, and Allied Neuroses. By William W. Ireland, M. D. Edin., Mavisbush House, Polton.

Experiences with Paquin's Antitubercle Serum in the Treatment of Laryngeal Tuberculosis. By Hanau W. Loeb, A.M., M.D., St. Louis.

Granular Lids; with Cases in Practice. By A. Britton Deynard, M.D., New York, Instructor Post Graduate Medical School, Etc. Etc.

Tumor and Large Cyst of the Cerebellum, with Symptoms Extending over Several Years. By J. T. Eskridge, M.D., Denver, Col.

Color-Vision and Color-Blindness. A Practical Manual for Railway Surgeons. By J. Ellis Jennings, M. D., St. Louis, Mo.

The Limitation of Surgical Operations as a Means of Relief or Cure in Epilepsy. By Thomas H. Manley, M.D., New York.

Deformities Following Fractures of the Shafts of Bones. with Observations on Treatment. By Thomas H. Manley, M.D.

A Case of Moral Insanity. Eliot Gorton, M. D. First Assistant Physician New Jersey State Hospital, Morris Plains.

The Technique of Tenotomy of the Ocular Muscles, By Leartus Connor, A.M., M.D., Detroit, Mich.

The Present Status of Pulmonary Tuberculosis. By Karl von Ruck, B. S., M.D., Asheville, N. C.

Chronic Seminal Vesiculitis, with Hemorrhage. By S. P. Collings, M.D., Hot Springs, Ark.

Surgical Treatment of Laryngeal Tuberculosis. By J. W. Gleitsmann, M. D.

The Importance of Physical Training in Childhood. By Walter Channing, M. D.

Prophylaxis in Surgery. By George Wiley Broome, M.D., St. Louis, Mo.

Practical Urethroscopy. By H. R. Wossidlo, M.D., Berlin, Germany.

Cranectomy—An Improved Technique. By A. H. Meisenbach, M.D.

Antiphthisin. By Charles Denison, A.M., M. D., Denver, Col.

Thoroughness in Medical Education. By Hunter Robb, M. D.

Kriminalanthropologie. Von Dr. G. Buschan in Stettin.



THE
ALIENIST AND NEUROLOGIST.

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NO. 2.

ORIGINAL CONTRIBUTIONS.

THE USE OF FORMALIN IN
NEUROLOGY.*

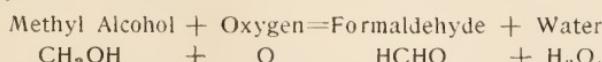
PIERRE A. FISH, D. SC. Washington, D. C.

[*Bureau of Animal Industry.*]

Read at the Eighteenth Annual Meeting of the American Microscopical Society, Cornell University Ithaca, N. Y., August 23, 1895.

Formalin (HCHO) is the forty per-cent. solution of formic aldehyde gas in water. The aldehyde is variously known as formaldehyde, formol and formalose, and has, of late, come into such a prominent degree of usefulness, that it might seem desirable to offer a brief, though inadequate survey of some of the uses to which it has already been put, after a year's experimentation upon neurologic material.

Formalin is prepared by subjecting methyl alcohol to oxidation.



Further oxidation will produce formic acid.

The method of its preparation in either large or small quantities has been given by Stebbins(28). Its production in large quantities is based upon the German patent No. 55,176, issued to Auguste Trillat, Dec. 17, 1890.

*This article was prepared mostly in the Anatomical Laboratory at Cornell University, Ithaca, N. Y.

It is miscible with water and alcohol in all proportions. It is kept in darkened bottles, as the light may cause decomposition or at least a separation of paraform, this may also sometimes be seen as a white substance around the stoppers of bottles exposed to a low temperature; it is said, however, that this separation has no influence on the action of formalin. Paraform does not seem to appear so readily in the weak as in the strong solutions.

With various tissues, it is likely that different percentages will be useful; the percentage suitable for one form of animal may be inadequate for the proper preservation of another. Its utility as a preservative for laboratory specimens has been pretty well tested and found favorable. It has a neutral or slightly acid reaction and an odor resembling that of Witch Hazel; but if used in strong solutions the gas becomes very irritable to the conjunctiva and to the mucosa of the respiratory passages. Even when used in solutions diluted to two per cent.* some discomfort is caused, unless the specimens be first rinsed or soaked for a short time in water.

When the dilute solutions are used for hardening they should be occasionally renewed and kept tightly covered to prevent deterioration.

Formalin also has the advantage over alcohol of not being inflammable and of not shrinking the tissue to the same degree, nor does it destroy the natural color of the specimen so quickly; but on the other hand it is not so suitable for museum preparations which may be exposed to cold temperatures, as the amount of water present would invite freezing and consequent destruction of the jar and perhaps of the specimen.

On account of its penetrating action, large as well as small organs or specimens may be hardened in it. Its cheapness is another element in its favor; even at the rate of two dollars per pound, at which it retails in this country, it is as cheap in dilute solutions, as alcohol free of tax. In Germany it sells for four or five marks (\$1.00 to \$1.25) per

*When the percentage is spoken of, it refers to the proportion of *commercial formalin* present and not formic aldehyde.

kilo (2.2 lbs.). It furthermore possesses the advantage of dissolving certain salts more readily than alcohol, and it may therefore have a wider range of application as an adjunct in preservative methods.

A limited experience with the preparation introduced under the name of formalose indicates that it has about the same percentage of formic aldehyde as formalin and may be used in the same way.

In August, 1893, F. Blum (4) called attention to the use of formaldehyde as an antiseptic in dilute solutions. In September of the same year, the same writer (5) speaks of its action as a hardening medium. His attention was called to this feature from the fact that the epidermis of his fingers became hardened after working for a time with formaldehyde.

On immersing a field mouse and certain organs in a four per cent. solution, he became convinced that they were hardened as well and more quickly than when alcohol was used.

Hermann (16) finds no especial advantage nor disadvantage in the use of formalin over other fixing agents; indeed he believes that for section methods the after-treatment with alcohol is somewhat deleterious to the tissue.

F. Blum (6) discusses Hermann's paper. J. Blum (7) used formol in two per cent. solutions upon some fishes and a lizard and found them to harden in a very short time and to preserve their form and color unchanged; the latter condition being due to the fact that the mucin of the mucus-secreting animals remains transparent in formalin.

Alleger (1) states that attention was first called to the germicidal action of formic aldehyde in 1886 by Low. Gelatine is made insoluble by the formalin and this is found to be of great advantage in bacteriology and histology; in the latter it is useful as a fixative in holding the sections to the slide, by adding a few drops of the formalin for each gram of a one-half to one per cent. gelatine solution. A gentle heat is applied to the slide until the paraffine is softened and the superfluous gelatin allowed to drain from the edge of the slide. Another interesting recommendation of Dr. Alleger is that fresh tissues may be placed directly in certain staining

reagents to which have been added five per cent. of formalin, and thus hardened and stained in bulk at the same time.

Hoyer (18) has taken parts of the nervous system from corpses, hardened them in formalin and then submitted them to the Golgi method with good results.

Marcus (24) recommends hardening the spinal cord for two or four weeks in a one-half per cent. solution of formalin, then small pieces one-half centimeter thick are cut out and placed in Müller's fluid for a week in an oven at 37°C. The pieces are then dehydrated and imbedded in collodion, after the sections are cut they are again placed in Müller's fluid and put back in the oven from a day to a week. The sections are then quickly washed in alcohol and put in the Weigert-Palhematoxylin solution for at least two days.

No mention is made of the copper acetate bath, and the resulting stain is apparently due to the formation of a chromium lake more or less modified by the use of the formalin.

Strong (30) advocates the following formula for the Golgi method;

Potassium bichromate (3½%-5%).	100 Vols.
Formalin.	2½-5 Vols.

After hardening several days the tissue is transferred to the silver-nitrate solution (one per cent.). Or the tissue after one or two days may be transferred from the above bichromate-formalin mixture to the following:

Potassium bichromate (5%),	2 Vols.
Formalin.	1 Vol.

After twelve or twenty-four hours the tissue is put into the silver solution. The advantages of this method are that it avoids the use of osmic acid, and that the stage of hardening favorable for impregnation lasts longer than when the osmium-bichromate mixture is used. In other words the formalin-bichromate does not over-harden. In this respect it is superior to the lithium-bichromate method of the same author. For embryonic tissue he finds the osmium-bichromate preferable.

Van Gieson (31) has used formalin in four per cent., six per cent. and ten per cent. solutions for ordinary histologic

methods, followed by ninety-five per cent. alcohol and collodion imbedding. Weigert's hematoxylin method can be applied to such sections and gives very good results for the plexus of fine fibers in the cortical and spinal gray matter. The myelin of the fine fibers is well preserved and gives the characteristic blue-black reaction with the Weigert hematoxylin stain, as in chrome-hardened preparations. The back-ground of the gray matter is especially clear and the fibers sharply delineated. The formalin-hardened sections should be soaked in the neutral copper acetate solution diluted one half with water for two hours, then thoroughly washed in water and immersed in the Weigert lithium-carbonate-hematoxylin solution from four to twelve hours. Weigert's borax-prussiate of potassium solution is useful for differentiation.

In the absence of any chrome salts in the above method, the stain is the result of the formation of a copper lake. The method has been confirmed in our own laboratory and the results were all that could be desired.

Dr. Van Gieson also finds that formalin-hardened sections are useful in Rehm's modification of Nissl's method, but that the minute structure of the nucleus and cytoplasm is not quite so sharply outlined as with fixation in absolute alcohol. The duration of the hardening period in formalin exerts an important and varying influence upon the tissues. Further investigations upon this matter are promised.

René Marie (25) uses a one per cent. solution of formalin and allows it to harden the tissue for four or five days. The usual staining methods are employed.

Lachi (21) finds that formalin in weak (one to two per cent. solution) or in stronger solution (ten to fifteen per cent.) exerts an injurious influence upon connective tissue by dissolving the fundamental substance, especially in the elastic fibers and mucosa. If used for such tissue some corrective should be employed.

He finds it of signal service in the nervous system, either in the central or peripheral, or in the embryo or adult. Nerves kept for a few days in from two to five per cent. solutions can be treated with silver nitrate, and show the

characteristic cross of Ranvier. Pieces from the central nervous system treated from five to nine days in a mixture of equal parts of twenty per cent. formalin and six per cent. potassium bichromate, gave the black reaction with silver nitrate equally as well as the osmium-bichromate mixture with the advantage that the blackness of the tissue was not so great as when osmic acid is used. Favorable results were obtained from the myel and embryonic brain of cows, and with the cerebrum, cerebellum and myel of the human adult.

The mixture indicated above is also recommended for the Weigert method. Paraffin is not advocated for an imbedding medium on account of friability.

Kenyon (20) records a free translation of J. Blum's article in the Bericht, über d Senckenbergische naturf. Gesell. in Frankf., a. M., 1894, and adds valuable observations of his own. Blum states that formaldehyde was discovered in 1863 by A. W. Hoffman while passing wood spirit (methyl alcohol) and air over a redhot platinum spiral.

The vapor carried into water to the point of saturation gives a forty per cent. solution of formaldehyd. This Blum calls formal because it was known under that name when it was first used in aqueous solution for disinfecting, hardening and preserving.

A reference is made to Born: "Demonstrationen einer Anzahl in Formaldehyde (Formol) gehärteter menschlicher Gehirne. Mediz. Sektion der schlesisch. Gesell. f. vaterl. Kultur, 1894," stating that pieces or even the entire brain hardens quickly, and the white and gray matter are sharply differentiated.

Blum also performed interesting experiments in preserving hens' eggs, certain invertebrates, vertebrates, fruits and plants.

Kenyon experimented upon a variety of forms and found a four per cent. solution of formic aldehyde (ten per cent. of the commercial formalin) best adapted to Salamanders.

Different percentages were tried; the lowest being one-fourth per cent. and the highest twenty per cent., some of the dilute solutions were found useful for some of the invertebrates. The fact noted by F. Blum was verified,

namely: that the vessels containing blood lost color when hardened in formalin, but this reappeared when treated by alcohol. This was explained by the coagulation of the fibrin by the alcohol giving it a yellow color and making it opaque and by bringing the corpuscles again to view. In conclusion, Mr. Kenyon believes that a solution stronger than two per cent. of the formalin is necessary to prevent the swelling and decolorization of specimens, and that from four to eight per cent. will give the best results.

To counteract the swelling caused by the weak solutions of formalin, alcohol was added. For histologic purposes a mixture of alcohol and formalin was found to act better than either one used alone.

Durig (11) also employs formalin as a substitute for osmic acid in the silver-impregnation method. His plan is to harden a piece one-half centimeter square for three days in four to six per cent. of formalin and three per cent. Potassium bichromate, then dry off on filter paper and immerse in a three-fourth per cent. silver solution. After two days return to the first mixture—and lastly, immerse it in silver containing a trace of formic acid.

Stebbins (28) gives a good description of the chemistry and preparation of formalin. This agent has recently been introduced into photography for hardening gelatine films, and found to be of great service. Formalin is a powerful reducing agent. In aqueous solution it reduces ammoniacal nitrate of silver to metallic silver, forming a mirror on the sides of the vessel containing the solution. It unites with bisulphite of soda or potassium, to form a crystalline addition product.

This reaction may advantageously be used for separating formaldehyde, as well as homologous aldehydes from mixtures of other bodies.

The combination of formalin with other hardening reagents, apparently has not, as yet, received much attention; its use in this connection will undoubtedly be of great value in macroscopic as well as microscopic methods.

Experiments with formalin show that good results may be obtained with nervous tissue when the following mixture is employed:

Water,	2,000 cc.
Formalin,	50 cc.
Sodium chloride, . . .	100 grams.
Zinc chloride, . . .	15 grams.

The specific gravity should be about 1.05. In practice the brain is left in this mixture for a week or ten days (a longer stay is not detrimental) and when practicable the cavities and blood vessels are injected with the same mixture in order to insure a more uniform hardening. The specimen may then be transferred to 2½ per cent. formalin (water, 2,000 cc., formalin, 50 cc.) and may remain in this solution indefinitely if the jar be kept tightly covered; or if it is to become a museum specimen it may, after a week in the second solution, be removed to fifty per cent., seventy per cent. and 90-95 per cent. alcohol for final storage.

An objection to the use of formalin solutions for museum purposes would be the large proportion of water present, which would freeze at low temperatures and cause injury to the specimen or jar containing it. Since formalin is readily miscible with alcohol, as well as water, enough of the former might be added to prevent freezing, say equal parts of ninety-five per cent. alcohol and two and one-half per cent. formalin; the exact proportions have not as yet been determined.

After an immersion of two weeks in the formalin solution, a human brain lost only 6.8 per cent. of its weight; but after an immersion in fifty per cent. alcohol for eight days and an immersion for an equal length of time in seventy per cent. alcohol, a total of sixteen days, it was found to have lost twenty-two per cent. of its first weight. A monkey brain after an immersion of eight days in the formalin mixture lost 5.4 per cent. of its weight; continued immersion in the same fluid for eighteen days longer caused a loss of less than two per cent. A fox brain was immersed in a similar mixture for five days and lost 6.5 per cent. of its weight; it was left in the same mixture eighteen days longer and lost 2.3 per cent. more of its weight. The brains were firm and in excellent condition for dissection.

The second, or two and one-half per cent. formalin solution redissolves any of the sodium chloride that may

remain in the brain, which is an advantage if the specimen is to be treated with alcohol, as the latter does not dissolve the salt. The brain should not be put from the formalin solution immediately into the strong alcohol as the tissue will shrink very materially.

Material treated in the way above described has yielded most satisfactory results histologically. Portions of the central nervous system of an adult, after treatment with the above brain mixture, have been later treated with other fixing reagents: *e. g.* corrosive sublimate, picro-aceto-sublimate and a chrom-acetic acid mixture with most excellent results. Equal parts of two and one-half percent. solution of formalin and the picro-aceto sublimate proved very satisfactory. The same proportion of formalin with the chrom-acetic mixture worked very well; but the combined mixture turned green after a short exposure to the light.

On November 3, 1894, in working on the myel of a young kitten, I substituted formalin for the osmic acid in the Golgi-Cajal method, using the following formula:

Potassium bichromate, 3%, 4 Vols.
Formalin, 2% 1 Vol.

The specimen was left in the mixture for nine days, then imbedded and cut; the results were very promising. In later experiments I added the strong formalin directly to the bichromate solution.

Formalin, 2 cc.
Potassium bichromate 3%, 100 cc.

The specimens remained in the mixture for three days and an equal length of time in the three-quarter per cent. silver solution.

The impregnated cells with their processes were particularly distinct, standing out like black diagrams on a clear back ground. After a time, although the cells and processes remained distinct, the actions of the light caused the sections to lose their light color and turn yellowish brown, resembling very much the sections prepared by the osmium-bichromate method.

The following mixture was also tried with even greater success than the preceding:

Müllers fluid.	100 cc.
Formalin	10% 2 cc.
Osmic acid	1% 2 cc.

The formalin-bichromate mixture was not tried upon embryonic tissue, nor the brains of low or generalised forms.

Care must be taken to keep the formalin-bichromate mixture in the dark to prevent its deterioration. Exposure to the light causes the solution to assume a dark muddy color, the result of some chemical change. It is advisable, therefore, to mix the two solutions as they are needed and and keep the mixture concealed.

Gage (15) has tested formalin as a dissociating agent. He recommends the following formula:

Normal salt solution,	1,000 cc.
Formalin, 40%.	2 cc.

His results were highly satisfactory. The solution acts quickly and yet retards deterioration for some time.

After three hours the ciliated cells from the trachea of a kitten were easily separated upon a slide and almost as good preparations were obtainable after ten days. The endymal cells bordering the encephalic cavities were found to be susceptible to the mixture, also "some of the cerebral cortex from various regions was tested, and it was found comparatively easy to obtain excellent preparations in which many of the multipolar nerve cells were wholly isolated."

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SEXUAL INVERSION IN MEN.

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WHEN the sexual instinct first appears in early youth it is much less specialized than, as a rule, it becomes later. Not only is it, at the outset, less definitely directed to a specific sexual end, but the sex of its object may be uncertain.* This has always been so well recognized that those in authority over young men have sometimes forced women upon them to avoid the risk of possible unnatural offences.†

The institution which presents these phenomena to us in the most marked and the most important manner is, naturally, the school,‡ in England especially the public school. In France, where the same phenomena are noted, Tarde has called attention to these relationships, "most usually Platonic in the primitive meaning of the word, which indicate a simple indecision of frontier between friendship and love, still undifferentiated in the dawn of the awakening heart," and he regrets that no one has yet studied them. In England we are very familiar with vague allusions to the vices of public schools. From time to time we read letters in the newspapers denouncing public schools as "hot-beds of vice," and one recent anonymous writer remarks that "some of our public schools almost provoke the pun-

*Thus Godard described the little boys in Cairo as amusing themselves indifferently either with boys or girls in sexual play. *Egypte et Palestine*. 1867, p. 105.

"†Bouchard, in his *Confessions*," writes Symonds in an unpublished note, "speaking of the Duc d' Orleans at Paris in the seventeenth century, says that this was a 'coure extrême-ment (p 88). This prince was of the same mind as Campanella, who, in the *Citta del Sole*, laid it down that young men ought to be freely admitted to women, for the avoidance of sexual aberrations. Aretino and Berni enable us to comprehend the sexual immorality of males congregated together in the courts of Roman prelates."

‡It was so even in the days of Juvenal, who reprobates the habit of mutual masturbation among schoolboys. (Sat. VII.)

ishment of the cities of the Plain."* But, so far as I have been able to gather, these vices have not been submitted to accurate investigation. The physicians and others connected with public schools who are in a position to study the matter, possess no psychological training and appear to view homosexuality with too much disgust to care to pay any careful attention to it. What knowledge they possess they keep to themselves, for it is considered to be to the interests of public schools that these things should be hushed up. When anything very scandalous occurs, one or two lads are expelled, to their own grave and perhaps, life-long injury, and without benefit to those who remain, whose awakening sexual life rarely receives intelligent sympathy.

Max Dessoir, in a recent study of the psychology of the sexual life which displays remarkable acumen and independence of judgement, comes to the conclusion that "an undifferentiated sexual feeling is normal, on the average; during the first years of puberty—i. e. from 13 to 15 in boys and from 12 to 14 in girls. While in later years it must be regarded as pathological." He adds very truly that in this early period the sexual emotion has not become centered in the sexual organs.† This latter fact is certainly far too often forgotten by grown-up persons who suspect the idealized passion of boys and girls of a physical side which children have often no suspicion of, and would view with repulsion and horror. How far the sexual instinct may be said to be undifferentiated in early puberty is a little doubtful to me; I should not like to go farther than to say that it is comparatively undifferentiated. I am not able to bring forward much new evidence to make our knowledge of this matter more precise, though it will be clear in the sequel that school life plays a certain part in developing (it would be incautious to say originating) sexual inversion.

*"Our Public Schools: Their Methods and Morals," *New Review*, July, 1893.

†Max Dessoir, "Zur Psychology der Vita Sexualis," *Allg. Zeitschrift für Psychiatrie* 1894, heft. V. Dr Conolly Norman also states that "the sexual passion at its first appearance is always indefinite, and is very easily turned in a wrong direction," and he apparently accounts for inversion by this fact, and by the precocity of neurotics. Prof. James (*Principles of Psychology*, Vol. II, p. 439) also considers inversion "a kind of sexual appetite of which very likely most men possess the germinal possibility."

These school-boy affections and passions arise to a large extent spontaneously with the evolution of the sexual emotions, though the method of manifestation may be a matter of example or suggestion. As the sexual instincts become stronger and as the lad leaves school or college to mix with men and women in the world, the instinct usually turns into the normal channel, in which channel the instincts of the majority of boys have been directed from the earliest appearance of puberty. But a certain proportion remain insensitive to the influence of women, and these may be regarded as true sexual inverts. Some of them while unattracted by the opposite sex feel little more than affectionate friendship for persons of their own sex. These are probably individuals of somewhat undeveloped sexual instincts. The members of this group are of some interest psychologically, although from the comparative quiescence of their sexual emotions they have received little attention. The following communication which I have received is of interest from this point of view:—

"The following facts may possibly be of interest to you, though my statement of them is necessarily general and vague. I happen to know intimately three cases of men whose affections have always been directed exclusively to persons of their own sex. Two of these contracted early—as I suppose most boys do—the habit of masturbation; both of them broke themselves of it later. The third, so far as I am aware, has always practiced, naturally and I think without effort, a rigid asceticism. In all these, I imagine, the physical impulse of sex is less imperative than in the average man. The emotional impulse, on the other hand, is very strong. It has given birth to friendships of which I find no adequate description anywhere but in the dialogues of Plato; and beyond a certain feeling of strangeness at the gradual discovery of a temperament apparently different to that of most men, it has provoked no kind of self-reproach or abuse. On the contrary, the feeling has been rather one of elation in the consciousness of a capacity of affection which appears to be finer and more spiritual than that which commonly subsists between persons of different sexes. These men are all of intellectual capacity above the average; and one is actively engaged in the world, where he is both respected for his capacity and admired for his character. I

mention this particularly, because it appears to be the habit, in books upon this subject, to regard the relation in question as pathological, and to select cases where those who are concerned in it are tormented with shame and remorse. In the cases to which I am referring nothing of the kind subsists.

I should add that in the cases I have mentioned there has been no sexual intercourse of any kind, and that in two at least of the parties concerned there is a strong feeling of repulsion to anything of the sort; and while a physical sexual attraction is recognised as the basis of the relation, as a matter of feeling, and partly also of theory, the ascetic ideal is adopted.

These are the only cases with which I am personally and intimately acquainted. But no one can have passed through a public school and college life without constantly observing indications of the phenomenon in question. It is clear to me that in a large number of instances there is no fixed line between what is called distinctively 'friendship' and love; and it is probably the influence of custom and public opinion that in most cases finally specializes the physical passion in the direction of the opposite sex."

The classification of the varieties of sexual inversion is still a matter of some difficulty. While some authorities are inclined to regard nearly all cases as acquired, others regard nearly every case as really congenital. Before the study of inversion was placed on a scientific basis all cases were of course regarded as acquired. The point of view is now so different that Moll, one of the latest and shrewdest students of the matter, in the first edition of his book was inclined to regard acquired inversion as almost non-existent. In the second edition, he modified this view and concluded that certain acquired cases did certainly occur. With this modified conclusion I concur. I put aside those cases of a more or less morbid character, in which old men with weakened sexual powers are attracted to boys. With this exception I regard acquired inversion as rare, and I should not be surprised to find that a more minute investigation would show that even in these rare cases there is a congenital element. I am only able to bring forward three cases which can fairly be regarded as acquired and without obvious congenital element. The determination of the congenital or acquired nature of a

particular case of inversion is frequently by no means so easy as many persons who dogmatically lay down the law on one side or the other seem to believe. The case must first be presented to us in much greater fullness than we are accustomed to get it. Then before we can assert that it is a purely congenital case we must be quite sure that no imprint of environment or suggestion, made at some "psychological moment," has not had a controlling influence. And before we can assert that a case is purely acquired we must possess a sufficiently minute knowledge of the subject in early life to be able to assert that his emotions and ideals as a child, and the nature of his physical organism have not predisposed him to homosexual impulses. When we are able to investigate our cases with due fullness and precision I think it will be found that in many cases we may fairly call acquired there is a congenital element, and that in many cases we may fairly call congenital, some accident of environment has had an influence in developing latent tendency. Unfortunately I have not been able to investigate all my cases personally, so that many points in the following histories remain obscure; but all the cases, not personally observed, have been investigated with due care, through very reliable channels; so far as the histories go they may, I believe, be accepted.

I do not propose to adopt any more complex classification than the clinical distinction between simple inversion and psycho-sexual homophobia as it is usually called; the first class including all those individuals who are sexually attracted only to their own sex, the second class those who are attracted to both sexes. In each group I will first present the apparently acquired cases.

SIMPLE INVERSION.

CASE I.. Both parents healthy; father of unusually fine physique. He is himself a manual worker, and also of exceptionally fine physique. He is, however, of nervous temperament. He is mentally bright, though not highly educated, a keen sportsman and in general a good example of an all-around healthy Englishman.

While very affectionate, his sexual desires are not

strongly developed on the physical side, and seem never to have been so. He sometimes masturbated about the age of puberty, but never afterwards. He does not appear to have well-marked erotic dreams. There used to be some attraction towards women though it was never strong. At the age of 26 he was seduced by a woman and had connection with her once. Afterwards he had reason to think she had played him false in various ways. This induced the strongest antipathy not only to this woman but to all marriageable women. A year after this episode homosexual feeling first became clear and defined. He is now 33 and feels the same antipathy to women; he hates even to speak of marriage.

There has only been one really strong attraction, towards a man of about the same age, but of different social class, and somewhat a contrast to him both physically and mentally. So far as the physical act is concerned this relationship is not definitely sexual, but it is of the most intimate possible kind, and the absence of the physical act is probably largely due to circumstances. At the same time there is no conscious desire for the act for its own sake, and the existing harmony and satisfaction is very complete. There is, however, no repulsion to the physical side and he regards the whole relationship as quite natural.

CASE II. Highlander, age 37, a "chance" child of rather poor birth, and employed as a postman. He is very amorous by nature, with good intelligence but feeble will. His heart is weak and there is a tendency to hypochondriasis. Latterly he has taken drugs to a considerable extent to relieve his heart-trouble, and has also become almost impotent.

As a young man he was very fond of the girls and showed a morbid degree of erethism (emission at sight of women, etc.); he had one or two serious love affairs and disappointments. Then the passion gradually veered round to his own sex, he does not know why. At the present time his life is always wrapped up in some male friend, but without much response on the physical side from the loved person. His sleeping and waking life is filled with a continual procession of images of physical and emotional desire. His temperament is somewhat artistic.

In this case there is a high degree of general feebleness and hyperæsthesia which is distinctly morbid.

The first case is slightly neurotic in character, the second decidedly morbid; in both the inversion seems to be acquired. Unfortunately in neither case have I had an

opportunity of making any extended investigation into the history; a love-disappointment, it need not be said, is no adequate cause for a total change in the direction of the sexual current; it is possible that a more minute examination might reveal some predisposition to inversion in the first case, while in the second the sexual hyperæsthesia is an important factor.

The next case may be regarded as congenital; there is no evidence whatever of the presence of the normal instinct at any period of life. In this case the sexual instinct is probably not very strongly developed.

CASE III. Of Lowland Scots' parentage. Both sides of house healthy and without cerebral or nervous disease.

Homosexual desires began at puberty. He practiced onanism to a limited extent at school and up to the age of about 22.

His erotic dreams are exclusively about males.

While very friendly and intimate with women of all ages he is instantly repelled by any display of sexual affection on their side. This has happened in varying degree in three or four cases.

With regard to marriage, he remarks: "As there seems no immediate danger of the race dying out I leave marriage to those who like it."

His male ideal has varied to some extent. It has for some years tended towards a healthy well-developed, athletic or out-of-door working type, intelligent and sympathetic but not specially intellectual.

At school his sexual relations were of the simplest type. Since then there have been none. "This," he says, "is not due either to absence of desire or presence of 'morals.' To put it shortly 'there were never the time and the place and the loved one together.' In another view, physical desire and general affection have not always coexisted towards the same person; and the former without the latter is comparatively transient, while the latter stops the gratification of the former, if it is felt that that gratification could in any way make the object of affection unhappy, mentally or emotionally."

He is healthy and fairly well developed; of sensitive emotional nature, but self-controlled; mentally he is receptive and aggressive by turns, sometimes uncritical, sometimes analytic. His temper is equable and he is strongly

affectionate. Very fond of music and the other arts but not highly imaginative.

Of sexual inversion in the abstract, he says he has no views, but he thus sums up his moral attitude: "I presume that, if it is there, it is there for use or abuse as men please. I condemn gratification of bodily desire at the expense of others in whatever form it may take. I condemn it no more in its inverted form than in the ordinary. I believe that affection between persons of the same sex, even when it includes the sexual passion and its indulgence, may lead to results as splendid as human nature can ever attain to. In short I place it on an absolute equality with love as ordinarily understood."

CASE IV.—Father and mother were first cousins but of healthy stock. He is himself a man of fair physique, but highly nervous. He is sympathetic, passionate and extremely affectionate. He is imaginative, with artistic tastes.

Homosexual desires appeared about the time of puberty. When at school he indulged moderately in masturbation, but never afterwards. His erotic dreams are of males and very frequent.

He is very good friends with women but has strong repulsion from sexual relations with them, or any approach to it. Marriage would be quite impossible to him, except as a matter of convenience in house-keeping, and on condition of excluding the sexual side altogether.

The males he is attracted to are of different types and classes, but generally younger men. The sexual relationship has in no case invoked "venus aversa."

From the moral point of view he regards normal and inverted sexuality as altogether on a par.

Of the next case I am unable to give details. But it is well worth introducing as it illustrates the terrible struggle which sometimes takes place in a man whose fundamental and irresistible instincts are utterly opposed to his only less fundamental moral convictions.

CASE V.—Physician, unmarried, English, aged 60.

Feels sure that in his own case heredity must be the cause. His father suffered from sever attacks of melancholia; he himself from the age of 13-14, without any incitement of an external kind, and with every good influence around him and a severe heart-felt striving on his own part after all that was good, nevertheless felt this instinct form and get strength within him. Prayers, struggles, all means

used, were of no avail. The thoughts, the imagination remained bent in one fixed direction.

His has been a miserable life. Death even if it meant nothing but a passage into nothingness, he says, would be a thousand times preferable. As to investigating the subject scientifically, nothing could come of it. There are so many deviations from normal, mental and moral (who indeed is without them?), and yet they do not constitute insanity. This he regards as one of them.

In another communication he says: "If all the miserable hours of wretchedness and despair could be counted up which I have suffered in my life, they would form a hell. Even now I cannot decide for myself how far one is exactly accountable for morbid instincts and feeling from which no prayers, no struggle can deliver one. My own opinion is that in one way or another no one is blameless, but that there is great difference in the moral nature, and that in the case of a great many persons stains are not felt as stains."

The next three cases are told in the subject's own words.

CASE VI.—My parentage is very sound and healthy. Both my parents (who belong to the professional middle class) have good general health; nor can I trace any marked abnormal or diseased tendency, of mind or body, in any records of the family.

Though of a strongly nervous temperament myself, and sensitive, my health is good. I am not aware of any tendency to physical disease. In early manhood, however, owing, I believe, to the great emotional tension under which I lived, my nervous system was a good deal shattered and exhausted. Mentally and morally my nature is pretty well balanced, and I have never had any serious perturbations in these departments.

At the age of eight or nine, and long before distinct sexual feelings declared themselves, I felt a friendly attraction towards my own sex, and this developed after the age of puberty into a passionate sense of love, which, however, never found any expression for itself till I was fully 20 years of age. I was a day boarder at school and heard little of school talk on sex subjects, was very reserved and modest besides; no elder person or parent ever spoke to me on such matters; and the passion for my own sex developed itself gradually, utterly uninfluenced from the outside. I never even during all this period, and till a good deal later, learned the practice of masturbation. My own sexual nature was a

mystery to me. I found myself cut off from the understanding of others, felt myself an outcast, and with a highly loving and clinging temperament was intensely miserable. I thought about my male friends—sometimes boys of my own age, sometimes elder boys, and once even a master—during the day and dreamed about them at night, but was too convinced that I was a hopeless monstrosity ever to make any effectual advances. Later on it was much the same, but gradually, though slowly, I came to find that there were others like myself. I made a few special friends and at last it came to me occasionally to sleep with them and to satisfy my imperious need by mutual embraces and emissions. Before this happened, however, I was once or twice on the brink of despair and madness with repressed passion and torment.

Meanwhile, from the first, my feeling, physically, towards the female sex was one of indifference, and later on, with the more special development of sex desires, one of positive repulsion. Though having several female friends, whose society I like and to whom I am sincerely attached, the thought of marriage or cohabitation with any such has always been odious to me.

As a boy, I was attracted in general by boys rather older than myself; after leaving school I still fell in love, in a romantic vein, with comrades of my own standing. Now—at the age of 37—my ideal of love is a powerful strongly built man of my own age or rather younger—preferably of the working class. Though having solid sense and character, he need not be specially intellectual. If endowed in the latter way, he must not be too glib or refined. Anything effeminate in a man, or anything of the cheap intellectual style repels me very decisively.

I have never had to do with actual pæderasty, so-called. My chief desire in love is bodily nearness or contact, as to sleep naked with a naked friend; the specially sexual, though urgent enough, seems a secondary matter. Pæderasty, either active or passive, might seem in place to me with one I loved very devotedly and who also loved me to that degree—but I think not otherwise. I am an artist by temperament and choice, fond of all beautiful things, especially the male human form, of active slight muscular build, and sympathetic but somewhat indecisive character, though possessing self-control.

I cannot regard my sexual feelings as unnatural or abnormal, since they have disclosed themselves so perfectly naturally and spontaneously within me. All that I have

read in books or heard spoken about the ordinary sexual love, its intensity and passion, life-long devotion, love at first sight, etc., seems to me to be easily matched by my own experiences in the homosexual form; and with regard to the morality of this complex subject, my feeling is that it is the same as should prevail in love between man and woman—namely, that no bodily satisfaction should be sought at the cost of another person's distress or degradation. I am sure that this kind of love is, notwithstanding the physical difficulties that attend it, as deeply stirring and ennobling as the other kind, if not more so; and I think that for a perfect relationship the actual sex gratifications (whatever they may be) probably hold a less important place in this love than in the other.

CASE VII.—I was born in England 34 years ago. My parents were both English and they married young. My grandfather married at an advanced age, having been in the army. My duties are clerical, and bring me into touch with a wide circle of friends and acquaintances.

At an early age for a boy I was sent to boarding school, being scarcely eight years old. Till then I do not remember to have had any sexual feeling. As soon as I went to school I developed deep affection for those of my school fellows who were well built and handsome. I spent much time in devising means of meeting them. With one boy in particular, who now occupies a distinguished position in society, I was very friendly, having for him a strong sexual passion, which I did not understand—nor he either—though we used always to creep into one or the other's bed every night. I suffered from erections at the thought of handsome boys ever since I was eight years old, but I did not understand until I was fifteen anything about sexual matters. During those years of school life, though I suffered erections at the slightest marks of affection from boys, I never took the slightest notice of girls or women, nor felt any sexual desires for them. All I wanted to do was to press my body against that of the boys I loved, or to handle their sexual organs. At fifteen a boy one day induced me to rub his parts and he did the same to me. I did not like the sensation at all; but he induced me to continue practising on him till he had an emission. I did not have the experience, and he told me that I was too young. I used after that to occasionally rub my own parts, but there being no emission I concluded that there was something wrong with me, and that I was impotent. Soon after I was 16, however, another boy accosted me whom I was very fond of, and I had an

emission in a very few moments. After that for some years I used to mutually gratify myself with the same boy friend as often as three or four times a week. Latterly we slept together and used to gratify one another by pressing the penis against the thigh of the other; but we never attempted nor had any inclination to attempt penetration of the anus; from this practice I used to invariably find that we shrank as unnatural and beastly.

My deep attachment to my friends, and a freeness of intercourse and conversation disinclined me from solitary masturbation, which I only practised when absent from my boy friends for a long time. I never suffered much from erotic dreams, but when I did, I either had no consciousness of sexual emission, or if I had, it was invariably dreaming that I was with some boy friend. It was only once that I suffered from any sexual passion for a woman, and in that case she was boyish in manner and much like a particular friend of mine. I did not, however, attempt to have any sexual relations with her; otherwise, I have never had, nor have now, any sexual passion for women; nor have I had relations of the kind with them. Some one showed me when I was about 20, a number of photographs of nude women, but they only repulsed me. If I were to marry it would be solely for the sake of friendship, and I should be bound to explain before contracting any such alliance, that I should not probably sleep with my wife at all.

I always preferred as friends, boys of good appearance; but I have had as friends boys who were plain in appearance. And as we have grown up to manhood and middle age we have not been ashamed of our earlier affection; but have always respected and loved one another more than we probably should otherwise have done.

In general I gather that public school, barrack and ship life and offices—such as the Telegraph and Factories—where boys are engaged in large numbers, tend to develop a passion which freer intercourse with girls and women would, in many cases, turn into the ordinary accepted channels of sexual passion. I notice that boys who work in cotton mills with girls almost invariably have frequent attempted sexual connection with girls; but, on the other hand, that boys who are merely thrown together without women do in very many cases acquire a habit of mutual sexual gratification, or of sexual desire in cases where shyness prevents acknowledgement of the passion.

My habits are friendly, and instinctively I can judge whether a boy's mind is on the sexual passion. Many

times boys have thanked me for talking to them and telling them my views of the question. Public school boys, and boys in more comfortable positions in life, are distinctly more addicted to homosexual passion than boys in poor circumstances. My moral view of the matter is that secret masturbation is an absolute evil; that the economic conditions of woman make it altogether unfair to use them as merely channels for satisfying sexual passion, that physical continence is impossible and that it is therefore better to spread abroad that spirit of open comradeship which is natural to many men and boys, and which results when the body is impassioned in mutual sex satisfaction. Against this stands the law, which is a relic of the ages gone by. It is a farce where every public school-boy knows and in most cases practices, homosexual habits, to attach a penalty to the practice. It might as reasonably be enacted that adultery with women is a penal offence.

Personally I enjoy good health, and am not subject to any disease that I am aware of, mentally or physically.

CASE VIII.—I am an Englishman, 30 years of age, high bred, refined and sensitive.

I had, I believe, a paternal and a maternal uncle who were both sexually inverted. They both died before they were 40.

I cannot remember when I did not take an interest in my own sex.

I did not discover the act of masturbation before I was ten, and from that time up to twenty-one confined myself entirely to that, though I conceived violent passions for schoolfellows unknown to them.

I have scarcely ever dreamt of any sexual intercourse with men, and do not have erotic dreams.

I am capable of great regard and liking for women when I deem them worthy of it, otherwise I have a strong repulsion to them and have never touched a woman.

I consider that in my particular case marriage would be a great wrong to the woman.

I am attracted by most forms of physical beauty, in outline, coloring, feature, etc. There is no special relation to age or class, though for a great friendship I would much prefer a gentleman.

I do not practice *pædication* and very rarely *fellatio*. I like embraces, spooning and real kissing, followed by mutual masturbation.

In appearance I am more beautiful than handsome, with

very large eyes, and Grecian caste of features. I resemble my mother, and have inherited from her a delicate and pretty complexion. At school I never cared much for games, preferring to walk alone or with a chosen or intimate friend. I am of sedentary habits and fond of hearing music. Penis is very large, seven inches long by seven inches in girth, when erect.

I am a firm believer in the absolute naturalness of my sexual inclinations. I am depressed at times, especially when I abstain from every form of erotic indulgence. I am not vain, except in the ordinary sense of being anxious to please, and have a feeling of surprise when anyone I like evinces a liking for me.

CASE IX.—Englishman, aged 51, government official. Nothing remarkable in ancestry, so far as he is aware; on his father's side there have been many soldiers; his mother's family he describes as "wild and dare-devil with sparks of genius." At a private school he went to as a young boy, he was "spooned" but not taught any tricks. When 14 years of age a young officer on a visit to his brother got into bed with him and had him *inter femora* several times. From that time onward he has always desired this done to him with some violence. He has occasionally masturbated, but only *faute de mieux*. Erotic dreams are rare and have never been vivid; they have always been of nude males. He has a strong repugnance to women. It is with difficulty that he restrains himself from being rude to a woman defective in tact or breeding, nor do good looks or intellect affect this strong prejudice. He has never attempted connection with a woman, and scarcely even desired it. He is unmarried but has no absolute aversion to the idea of marriage. He is attracted to men irrespective, to a large extent, of their calling or condition or even age. But they must be virile and strongly built. He finds that uniform or livery (soldiers, sailors, grooms, footmen) is a temptation. He is not attracted to the very young nor to the effeminate. *Ageus patiens inter crura exquirit voloptatem. Interdum inter digitos, rarium inter labra, patientis vires exsorbet. Paedicationem expuit.*

He is tall and fair with light very soft hair (which has "fetched" men in a remarkable manner); white soft skin, with mustache, but no beard. As boy and as man he has had no taste for field sports, but is fond of music, books, art and the sea. He smokes freely; cannot whistle. In youth and early manhood his seminal capacity was singularly great. He is scholarly and especially linguistic in tastes.

He loathes his homosexual inclinations, although perfectly natural to him, and considers that all such abnormal sexual tendencies concern the doctor and the moralist, not the legislator.

CASE X.—Scotchman, age 38. His paternal ancestors were normal so far as he knows. His mother belonged to a very eccentric old Celtic family.

Soon after 5 he became so enamoured of a young shepherd that the boy had to be sent away. He practised masturbation many years before the age of puberty and attaches importance to this as a factor in the evolution of his homosexual life.

He has had erotic dreams rarely about men, about women more frequently. While indifferent to women, he feels no repulsion toward them. He has had connection with women two or three times, but without experiencing the same passionate emotions as with men.

He would like a son but he has never been able to get up the necessary amount of passion to lead to marriage.

He has always had a sentimental and platonic affection for men. Of late years he has formed two friendships with adults, of an affectionate and also erotic character. He cares little for anything beyond mutual masturbation and kissing; what he desires is the love of the male.

In appearance there is nothing abnormal about him except an air of youth. He is vigorous both in body and mind and has enormous power of resisting fatigue. He is an excellent man of business. Is a patient student.

He sees no harm in his homosexual passions. He is averse to promiscuity. His ideal is a permanent union which includes sexual relations.

It will be observed that in the preceding ten cases no reference is made to the practice of *pædicatio* or *immissio penis in anum*, commonly regarded as the essential part of the homosexual act. It is probable that in none of these cases (with the possible exception of case V) has *pædicatio* been practiced. In the two following cases it has occasionally been practiced but only with repugnance, and not as the satisfaction of an instinct, so that these cases should really be classed with those that precede.

CASE XI.—Englishman of independent means, aged 35, belonging to an ordinarily healthy family, so far as he knows. He was the only son and was brought up at home with two sisters until the age of 14. At school was a delicate

effeminate boy, shunning games, for which he was not strong enough and had no inclination, and fond of music, pictures and poetry. He was also very religious, even to the verge of hysteria.

He has been intensely attracted to men, so far back as he can recollect. The only women who attracted him were much older than himself and the feeling was never sexual. At school he had only one love affair with a comrade; he was restrained by religious feeling, at the expense (he has since been inclined to think) of his health. At the University he formed a great friendship with another sexual invert, which lasted for nearly ten years, although the two friends had little in common beyond their sexual feelings.

Between the ages of 19 and 27 he was accustomed to masturbate. He does not, however, consider that this was voluntary; it took place in a sort of dreamy state between sleeping and waking, and was accompanied by lascivious thoughts and dreams of men. From the age of puberty he has suffered intensely from erotic dreams, and at the present time, when his sexual instincts are not satisfied, they occur at least once a week. It has not, indeed, been at all uncommon for them to occur three times in one night. At first they were of women, now almost invariably of men. Women do not attract him and he has never had sexual intercourse with one, although when about the age of 21 he tried hard to force himself to go with women, never, however, proceeding so far as the act of coition. Intellectually he likes women very much, and women are among his greatest friends. He would gladly marry, as he longs for companionship and for children, but he dreads inability to satisfy a woman and the danger of falling in love with a man. He is mostly attracted to youths of from 18 to 24, slightly built and pretty rather than handsome. Big muscular men have little attraction for him. He finds that mere contact of body to body is sufficient to produce the physical effects and pleasure of coition. *Padicatio* disgusts him unless he is passionately devoted to a person who insists upon it, and even then he feels it to be debasing and bestial. *Fellatio* excites him intensely. He finds that moderate intercourse with his own sex does him good, and he feels better and stronger for it.

Although formerly effeminate he is not now of unmanly appearance. He is fond of boating and walking, but of no other active pursuits. He is musical and writes a good deal; has published. Is very susceptible to scents and colors, smokes, and is fond of society, dining out a good deal when

in London. He prides himself that though his instincts are not manly, he is able to hide them with some success and that he does not look like a sexual invert. His opinion regarding the moral aspects of the matter may be given in his own words:—"My feeling about this subject is a very mixed one and hard to define. It worries and depresses me intensely at times. I have had two or three great passions for men younger than myself. Sometimes they begin with mere sexual appetite, but this is always secondary, and my one wish is to devote myself and what little means I have simply to the welfare of the person I love. But I must have entire possession and am madly jealous. I would give anything not to be an Urning, and I have tried and fought against my instincts for years by every means—religion, hygiene, etc.—I can think of. I feel sure it is natural to me, but that it is disease I do not feel certain. Of its extraordinary prevalence I am assured, for I have found it everywhere—I have travelled a good deal—and in all stations of life."

CASE XII.—Irish, aged 36; knows of nothing unusual in his ancestry.

His tastes are masculine in every respect. He is strong, healthy and fond of exercises and sports. The sexual instincts are abnormally developed; and he confesses to an enormous appetite for almost everything, food, drink, smoking and all the good things of life.

At about the age of 14 he practiced masturbation with other boys of the same age and also had much pleasure in being in bed with an uncle with whom the same thing was practiced. Later on he practiced masturbation with every boy or man with whom he was on terms of intimacy; to have been in bed with anyone without anything of the sort taking place would have made sleep impossible and rendered him utterly wretched. His erotic dreams at first were concerned with women, but more recently they are usually of young men and very rarely of women. He is mostly indifferent to women as also they have always been to him. Although good looking, strong and masculine he has never known a woman to be in love with him. When about the age of 18 he imagined he was in love with a girl; and he has often, between the ages of 20 to 30, cohabited with prostitutes. He remembers on one occasion, many years ago, having connection with a woman seven or eight times in one night, and then having to masturbate at noon the next day. He is unmarried and thinks it is unlikely that he ever will marry, but he adds that if a healthy, handsome and

intelligent woman fell in love with him he might change his mind, as it would be lonely to be old and alone, and he would like to have children.

He is never attracted to men older than himself and prefers youths between the ages of 18 and 25. They may be of any class but he does not like common people and is not attached to uniforms or liveries. The requisite attractions are an intelligent eye, a voluptuous mouth and "intelligent teeth." "If Alcibiades himself tried to woo me," he says, "and had bad teeth his labour would be in vain. He has sometimes been the active participant in *pædicatio* and has tried the passive out of curiosity but without experiencing any particularly pleasurable sensations; he prefers *fellatio*.

He does not consider that he is doing anything wrong, and regards his acts as quite natural. His only regret is the absorbing nature of his passions which obtrude themselves in season and out of season, seldom or never leaving him quiet, and sometimes making life a hell. Yet he doubts whether he would change himself even if he had the power.

In the five following cases *pædicatio* is generally practiced, either as the preferred form of sexual gratification or as a matter of indifference.

CASE XIII.—Age 25; is employed in an ordinary workshop and lives in the back alley of a large town in which he was born and bred. Fair, slight and refined in appearance. The sexual organs are normal and well developed and the sexual passions strong.

His mother is a big masculine woman and he is much attached to her. Father is slight and weakly. He has seven brothers and one sister.

Homosexual desires began at an early age, though he does not seem to have come under any perverse influences. He is not inclined to masturbation.

Erotic dreams are always of males.

He declares he never cared for any woman except his mother and that he could not endure to sleep with a woman.

He says he generally falls in love with a man at first sight—as a rule someone older than himself and of higher class—and longs to sleep and be with him. In one case he fell in love with a man twice his own age, and would not rest till he had won his affection. He does not much care what form the sexual relation takes.

He is sensitive and feminine by nature, gentle and

affectionate. He is neat and orderly in his habits, and fond of housework; helps his mother in washing, etc.

He appears to think that male attachments are perfectly natural.

CASE XIV.—Englishman, 31 years of age, an actor. He remarks that his father and mother were passionless and that this was possibly a cause of neuropathic disorder. (It may have been a symptom of it.) Homosexual desires began so early that it is impossible to trace them, and school friendships were serious passions. Masturbation had, he declares, nothing to do with his inclinations. His erotic dreams are always of boys and he has an intense physical aversion to women. He is attracted to individuals who are slightly effeminate, especially boys between the ages of 14 and 18. He practices complete pederasty, or, as he expresses it, “the utmost act of possession, because it *is* possession.” He is of medium height, fair hair and skin; dislikes violent amusements and is a lover of poetry and art. He believes that, kept within bounds, this love is right and capable of being made noble—far more so than the love of woman—and that to call it unnatural is grossly unjust and untrue.

CASE XV.—“Gentleman, of Scotch extraction, without profession. Aged 27.

I had an uncle on the maternal side whom I have every reason to believe had the same inclinations as myself.

Homosexual tastes began to show themselves about the age of 12, when I was devotedly attached to a cousin of about the same age who has since married.

The habit of self-abuse has always had a great hold on me, and it is only within a short time that I have broken myself of the practise. It is especially strong when I am away from sympathetic friends and opportunity of meeting others of similar tastes.

I am seldom troubled with erotic dreams; on the few occasions on which they have taken place the exciting object has generally assumed the form of some boy I have known.

Sexual intercourse with women, even in imagination, is absolutely repulsive. I enjoy their society, particular that of married women. On the very few occasions, many years since, when I have had intercourse with women I have never derived the slightest pleasure from the act.

I am not married. I regard marriage personally as a necessary evil.

I prefer boys about 17 to 20 years of age, though occasionally slightly older men attract me. I like the smooth hairless face and body of a boy; a slight feminine

trait adds to the attraction but it must not be too developed. I prefer dark boys to fair. They must be of my own class of life and refined; I am particularly sensitive to charm of voice and mode of expression, and any coarseness in this particular has the effect of repelling me.

In the case of a few boys I have indulged in *pædication*, but only when they are particularly attractive to me. As a general rule I am satisfied with such pleasure as can be obtained by the use of the hand, and indeed prefer it. The utter *abandon* of the person with me is necessary to any degree of pleasure, and the acts must be mutual.

I am tall, slight and dark, with a small mustache. I have always been delicate and averse to all rough games. I suffer a great deal from "nerves", and am always terribly sensitive to jarring or disturbing influence. I am passionately devoted to music and indeed to art of all kinds, though through bad health my powers have not been developed to their proper extent.

I consider the taste for sexual relations with my own sex to be perfectly natural; as either having been inherited, or as the result of having been led astray by an older man than myself at the age of puberty. [It will be observed that the word "natural" is here used in a peculiar sense.] At the same time I look upon it as a curse, for it is a moral barrier between the ordinary run of mankind and myself. I have contempt for those who allow the passion to conquer them, and whose life is spent in eternally seeking for people of like tastes. I never regard the act of sexual intercourse as sin, and, if comparisons must be drawn, consider this particular form as more harmless in its effects than the love of the opposite sex."

CASE XVI.—Englishman, born in Paris, aged 26, an actor. He belongs to an old English family; his father, so far as he is aware, had no homosexual inclinations, nor had any of his ancestors on the paternal side; but he believes that his mother's family, and especially a maternal uncle who had a strong feeling for beauty of form, were more akin to him in this respect.

His earliest recollections show an attraction for males. At children's parties he incurred his father's anger by flirting with and kissing other small boys, and his feelings grew in intensity with years. He has never practised self abuse and seldom had erotic dreams; when they do occur they are about males.

His physical feeling for women is one of absolute indifference. He admires beautiful women in the same way as one

admires beautiful scenery. At the same time he likes to talk with clever women and has found many friendships with frank, pure and cultivated English girls, for whom he has the utmost admiration and respect. Marriage with a woman is impossible because physical pleasure is impossible; he has tried the latter and cannot obtain the slightest sexual feeling or excitement.

He especially admires youths (though they must not be immature) from 16 or 17 to about 25. The type which physically appeals to him most, and to which he appeals, is fair, smooth-skinned, gentle, rather girlish and effeminate, with the effeminacy of the *ingénue*, not the *cocotte*. His favorite to attract him must be submissive and womanly; he likes to be the man and the master. On this point he adds: "The great passion of my life is an exception and stands on an utterly different level. It realizes an ideal of marriage in which neither is master, but both share a joint empire and in which tyranny would be equally painful to both. But this friendship and love is for an equal, a year younger than myself, and does not preclude other and less creditable *liaisons*, *physical* constancy being impossible to men of our calibre."

Pælicatio is the satisfaction he prefers, provided he takes the active, never the passive *role*.

He is handsome with broad shoulders, good figure and somewhat classic type of face with fine blue eyes. He likes boating and skating, though not cricket or football, and is usually ready for fun but has at the same time a taste for reading.

He has no moral feelings on these matters; he regards them as outside ethics, mere matters of temperament and social feeling. If England were underpopulated he thinks he might possibly feel some slight pangs of remorse, but as things are he feels that in prostituting males rather than females he is doing a meritorious action.

CASE XVII.—Englishman, 28 years of age, belonging to an old north country family; of no profession. Fair, with blue eyes, of medium height and rather thin; somewhat lacking in energy and inclined to take life easily. He knows of no other case of inversion in his family, beyond a distant cousin who was the first to enlighten him on this subject when he was 20 years of age.

He has always been more attracted to men than to women as long as he can remember. He practised masturbation as a boy but was always much more excited when doing so with another boy than by himself. He has never

so far as he remembers, had any erotic dreams about women, but often about men. He has sometimes dreamed that he was being married to a woman by force and has awoke feeling utterly wretched. He has twice tried to have connection with prostitutes but failed, and on both occasions resorted to passive *fellatio*. He thus writes of his attitude "I have had a very good experience of my feelings towards women which I will relate. When I was about 19 years old (before I was enlightened by my cousin) I was thrown very much in the society of a most fascinating and pretty married woman of about 21 years of age. She had just been divorced and it was generally supposed that I was very much in love with her, and being young I was proud of being thought so, and tried to make myself believe I was; but I never once during that time had the slightest desire to cohabit with her, and although I used to spoon her I never got excited, or even had an erection. In fact, I always felt very nervous when in the presence of a woman. An unmarried girl simply bores me to death. When a boy, I always loved with the greatest of devotion boys of my own age, and would always have one special friend whom I would write most loving letters to. Now I prefer youths from 18 to 21 years of age; for the last three years I have loved one boy who was 16 years old when we first met; we both fell in love with one another the moment we met; we are at this moment as much in love with one another as it is possible to be. He is certainly the most manly boy I ever met in my life."

He prefers active *pædicatio* but passive *pædicatio* also give him pleasure.

On the moral aspects of the matter he writes: "My feeling as regards this love for men is that as long as it is reciprocal there is no harm, but when it is an act of prostitution I think it wrong, especially when practised with boys at an age when they don't know their own minds". He adds that he always encourages the boy he is now living with to talk of women, because, although he feels sure the boy is as much inverted as he is himself, he regards him as not yet old enough to form an opinion of his own. There are some obvious fallacies in this attitude but the subject markedly lacks reasoning power.

The next case I present in some detail; it is interesting as showing the mental and emotional development in a very radical case of sexual inversion.

CASE XVIII.—English, independent means, aged 49.

His father and his father's family were robust, healthy and prolific. On his mother's side, plithisis, insanity and eccentricity are traceable. He belongs to a large family, some of whom died in early childhood and at birth, while others are normal. He himself was a weakly and highly nervous child, subject to night-terrors and somnambulism, excessive shyness and religious disquietude.

Sexual consciousness awoke before the age of 8 when his attention was directed to his own penis. His nurse while out walking with him one day told him that when little boys grow up their penes fall off. The nursery maid sniggered and he felt that there must be something peculiar about the penis. He suffered from irritability of the prepuce and the nurse powdered it before he went to sleep. There was no transition from this to self-abuse.

About the same time he became subject to curious half waking dreams. In these he imagined himself the servant of several adult naked sailors; he crouched between their thighs and called himself their dirty pig, and by their orders he performed services for their genitals and buttocks which he contemplated and handled with relish. At about the same period when these visions began to come to him he casually heard that a man used to come and expose his person before the window of a room where the maids sat; this troubled him vaguely. Between the age of 8 and 11 he twice took the penis of a cousin into his mouth, after they had slept together; the feeling of the penis pleased him. When sleeping with another cousin, they used to lie with hands outstretched to cover each other's penis or nates. He preferred the nates but his cousin the penis. Neither of these cousins was homosexual and there was no attempt at mutual masturbation. He was in the habit of playing with five male cousins. One of these boys was unpopular with the others, and they invented a method of punishing him for supposed offences. They sat round the room on chairs, each with his penis exposed, and the boy to be punished went round on his knees and took each penis into his mouth in turn. This was supposed to humiliate him. It did not lead to masturbation. On one occasion the child accidentally observed a boy who sat next to him in school playing with his penis and caressing it. This gave him a powerful uneasy sensation. With regard to all these points the subject observes that none of the boys with whom he was connected at this period, and who were exposed to precisely the same influences, became homosexual.

He was himself, from the first, indifferent to the opposite sex. In early childhood, and up to the age of 13, he had

frequent opportunities of closely inspecting the sexual organs of girls, his playfellows. These roused no sexual excitement. On the contrary the smell of the female parts affected him disagreeably. When he once saw a schoolfellow copulating with a little girl, it gave him a sense of mystical horror. Nor did the sight of the male organs arouse any particular sensations. He is, however, of opinion that living with his sisters in childhood, he felt more curious about his own sex as being more remote from him. He showed no effeminacy in his preferences for games or work.

He was mentally precocious. When he began to read books he felt particularly attracted to certain male characters; the Adonis of Shakespeare's poem (he wished he had been Venus), Anzoletto in George Sand's *Consuelo*, Hermes in Homer. He was very curious to know why the Emperors kept boys as well as girls in their seraglios, and what the male gods did with the youths they loved. As time went on he began to realize that the fascination of the male was sexual for him.

He went to a public school. Here he was provoked by boy friends to masturbate, but though he often saw the act in process it only inspired him with a sense of indecency. In his fifteenth year puberty commenced with nocturnal emissions, and at the same time he began to masturbate and continued to do so about once a week or once a fortnight during a period of eight months; always with a feeling that that was a poor satisfaction and repulsive. His thoughts were not directed either to males or females while masturbating. He spoke to his father about these signs of puberty and by his father's advice he entirely abandoned onanism; he only resumed the practice, to some extent, after the age of 30, when he was without male comradeship.

The nocturnal emissions, after he had abandoned self-abuse, became very frequent and exhausting. They were medically treated by tonics and quinine and strychnine. He thinks this treatment exaggerated his neurosis. All this time, no kind of sexual feeling for girls made itself felt; with the exception of a comradely liking for his sister and for her governess, he was perfectly indifferent to them. He could not understand what his schoolfellows found in women, or the stories they told about wantonness and the delight of coitus.

His old dreams about the sailors had disappeared. But now he enjoyed visions of beautiful young men and exquisite Greek statues; he often shed tears when he thought of them. He was often visited in nocturnal visions by a beautiful ideal youth, who clasped him round, with luminous blue

eyes and outspread streaming hair. These dreams persisted for many years. But another kind gradually usurped their place to some extent. These second visions took the form of the large erect organs of naked young grooms or peasants. These gross visions offended his taste and hurt him, though at the same time they evoked a strong active desire of possession; he took a strange poetic pleasure in the ideal forms. But the seminal losses which accompanied both kinds of dreams were a perpetual source of misery to him.

There is no doubt that at this time, that is, between his 15th and 17th years, a homosexual diathesis had become established. He never frequented loose women, though he sometimes thought that would be the best way of combating his growing inclination for males. And he thinks that he might have brought himself to indulge freely in purely sexual pleasure with women if he made their first acquaintance in a male costume, as *débordeuses*, *Cherubino*, court pages, young halberdiers, as it is only when so clothed that women on the stage or in the ball-room have excited him.

His ideal of morality and fear of venereal infection, more than physical incapacity, kept him what is called chaste. He never dreamed of women, never sought their society, never felt the slightest sexual excitement in their presence, never idealized them. Ästhetically, he thought them far less beautiful than men. Statues and pictures of naked women had no attraction for him, while all objects of art which represented handsome males deeply stirred him.

It was in his 18th year that an event occurred which he regards as decisive in his development. He read the *Phædrus* and *Symposium* of Plato. A new world opened, and he felt that his own nature had been revealed. Next year he formed a passionate but pure friendship with a boy of 15. Personal contact with the boy caused erection, extreme agitation, and aching pleasure, but not ejaculation. Through four years of intimacy he never saw the boy naked or touched him pruriently. Only twice he kissed him. He says that these two kisses were the most perfect joys he ever felt.

His father now became seriously anxious both about his health and his reputation. He warned him of the social and legal dangers attending his temperament. But he did not encourage him to try coitus with women. He himself thinks that his own sense of danger might have made this method successful, or that at all events the habit of intercourse with women might have lessened neurosis and diverted his mind to some extent from homosexual thoughts.

A period of great pain and anxiety now opened for him. It is true that at the University he made very brilliant studies. But his neurasthenia increased; he suffered from insomnia, obscure cerebral discomfort, stammering, chronic conjunctivitis, inability to concentrate his attention, and dejection.

Meanwhile his homosexual emotions strengthened, and assumed a more sensual character. He abstained from indulging them, as also from onanism, but he was often forced with shame and reluctance to frequent places,—baths, urinaries, and so forth,—where there were opportunities of seeing naked men. Having no passion for women it was easy to avoid them. Yet they inspired him with no exact horror. He used to dream of finding an exit from his painful situation by cohabitation with some coarse boyish girl of the people; but his dread of syphilis stood in the way. He felt, however, that he must conquer himself by efforts of will, and by a persistent direction of his thoughts to heterosexual images. He sought the society of distinguished women. Once when abroad he coaxed up a romantic affection for a young girl of 15, which came to nothing, probably because the girl felt the want of absolute passion in his wooing. She excited his imagination, and he really loved her; but she did not, even in the closest contact, stimulate his sexual appetite. Once, when he kissed her just after she had risen from bed in the morning, a curious physical repugnance came over him attended with a sad feeling of disappointment.

He was strongly advised to marry by physicians. At last he did so. He found that he was potent, and he begot several children, but he also found to his disappointment that he only cohabited with his wife *faute de mieux*. The tyranny of the male genital organs on his fancy increased to such an extent that visions of men pursued him even during the act of copulation with his wife. Owing to these causes his physical, mental and moral discomfort became acute. His health gave way.

At about the age of 30, unable to endure his position any longer, he at last yielded to his sexual inclinations. As he began to do this he also began to regain calm and comparative health. He formed a close alliance with a handsome youth of 19. This *liaison* was largely sentimental and marked by a kind of etherialized sensuality. It evolved no sexual acts beyond kissing, naked contact, and rare involuntary emissions of semen. About the age of 36 he began freely to follow homosexual inclinations.

At the same time when he had begun to indulge his inborn

homosexual instincts he rapidly recovered his health. The neurotic disturbances subsided.

He has always loved men younger than himself. At about the age of 27 he began to admire young soldiers. Since he has yielded freely to his inclinations; the men he has sought are young strong fellows, from 18 to 25, fully formed and potent, invariably persons of a lower social rank than his own. He carried on one *liaison* continuously for 12 years; it began without passion on the friend's side but gradually grew to nearly equal strength on both side. He is not attracted by uniforms but seeks some uncontaminated child of Nature. The methods of satisfaction have varied with the phases of his passion. At first they were romantic and platonic, when a hand-touch, a rare kiss, mere presence, sufficed. In the second period sleeping side by side, naked inspection of the body of the loved man, embracements, occasional emissions of semen after prolonged contact. In the third period, when robust adults were sought and found, the gratification became more frankly sensual. It took every shape: mutual masturbation, inter-crural coitus, *fellatio*, *irrumatio*, occasionally *pædicatio*, always according to the inclination or concession of the beloved male. Every portion of the loved one's body seems to him equally worthy of affection. He has found exquisite pleasure from the man's head on his bosom during the long hours of slumber; he has found equal pleasure when his own face has been applied through long hours to the thighs and buttocks of his friend. He himself in all these acts plays the active masculine part. He never yields himself to the other, and he asserts that he never has the joy of finding himself desired with ardour equal to his own. He does not shrink from passive *pædicatio*; it is never demanded of him. Coitus with males as above described, always seems to him healthy and natural; it leaves a deep sense of well-being and has cemented durable friendships with many excellent men. He has always sought to form permanent ties with the men whom he has adored so excessively.

He is of medium height, not robust but with great nervous energy, with strong power of will and self-control, able to resist fatigue and changes of external circumstance. In boyhood he had no liking for female occupations, or for the society of girls, preferring study and solitude. He avoided games and the noisy occupations of boys, but was only non-masculine in his indifference to sport, was never feminine in dress or habit. He never succeeded in his attempts to whistle. Is a great smoker and has at times drunk much.

He likes riding, skating and climbing, but is a poor horseman, and is clumsy with his hands. He has no capacity for the fine arts and music, though much interested in them, and is a prolific author.

He has suffered extremely throughout life owing to his sense of the difference between himself and normal human beings. No pleasure he has enjoyed, he declares, can equal a thousandth part of the pain caused by the internal consciousness of Pariahdom. The utmost he can plead in his own defense, he admits, is irresponsibility, for he acknowledges that his impulse may be morbid. But he feels absolutely certain that in early life his health was ruined, and his moral repose destroyed, owing to the perpetual conflict with his own inborn nature, and that relief and strength came with indulgence. Although he always has before him the terror of discovery, he is convinced that his sexual dealings with men have been thoroughly wholesome to himself, largely increasing his physical, moral, and intellectual energy, and not injurious to others. As a man of letters he regrets that he has been shut out from that form of artistic expression which would express his own emotions. He has no sense whatever of moral wrong in his actions, and he regards the attitude of society towards those in his position as utterly unjust and founded on false principles.

In the five preceding cases the individuals in question all exhibit what may be called the masculine diathesis; although their affections are directed towards men, they themselves feel as men, not as women, towards objects of their affections. This finds expression in their choice of the active rôle in sexual relations. In the two following cases the subjects prefer the passive rôle; one of them is of somewhat feminine nature generally; the other remains masculine in his non-sexual habits.

CASE XIX.—Englishman, aged 70, of German descent on father's side. Was first child of his mother who was 36 at his birth; a younger brother normal; has no other relatives.

He was brought up in England, and went to school at the age of 13. At a very early age, between 6 and 8, was deeply impressed by the handsome face of a young man, a royal trumpeter on horse-back, seen in a procession. This and the sight of the naked body of young men in a rowing match on the river caused great commotion, but not of a definitely sexual character. This was increased by the sight

of a beautiful male model of a young Turk smoking, with his dress open in front, showing much of the breast and below the waist. He became familiar with pictures, admired the male figures of Italian martyrs and the full rich forms of the Antinous, and he read with avidity the *Arabian Nights* and other oriental tales, translations from the classics, Suetonius, Petronius, etc. He drew naked models in life schools, and delighted in male ballet dancers. As a child he used to perform in private theatricals; he excelled in female parts and sang the songs of Madame Vestris, encouraged in this by his father.

The sexual organs have never been fully developed, and the testicles, though large, are of flabby consistence. He cannot whistle. He thinks he ought to have been a woman.

At school he was shy and reserved and had no particular intimacy with any one, although he once desired it. He learnt self-abuse from his younger brother who had learnt it from an older boy. He has never had erotic dreams. He never touched any one but his brother until later when travelling in Italy, and then only his fellow traveller. When travelling in Asia Minor, he had many opportunities but always put them aside from fear, afterwards regretting his fearfulness. He yearned for intimacy with particular friends but never dared to express it. He went much to theatres and what he saw there incited him to masturbation. When he was about 30 years of age his reserve, and his fear of treachery and extortion were at last overcome by an incident which occurred late at night at the Royal Exchange, and again in a dark recess in the gallery of the Olympic Theatre when Gustavus Brooke was performing. From that time the Adelphi Theatre, the Italian Opera and the open Parks at night became his fields of adventure. He remarks that among people crowding to witness a fire he found many opportunities. His especial intimates were a railway clerk and an Italian model.

In more recent years he has chiefly found gratification among footmen and policemen.

He is exclusively passive; also likes mutual *fellatio*. He used greatly to admire finely developed forms (conscious of his own shortcomings), shapely limbs and delicate brown hair, and always admired strength and manly vigour. He never took any interest in boys, and has always been indifferent to women.

CASE XX.—A medical man, English, aged 30. He believes that his father, who was a magistrate, was very sympathetic towards men; on several occasions he has sat with him on the bench when cases of sodomy were brought

up; he discharged three cases, although there could be little doubt as to their guilt and was very lenient to the others.

From the age of 9 he loved sleeping with his brother, ten years older, who was in the navy; they slept in different beds, and the child went to bed early but he always kept awake to see his brother undress, as he adored his naked body; and would then get into his bed. During his brother's absence at sea the boy longed for his return and would practise self-abuse with the thought of his brother's naked body before him. This brother's death was a source of great grief. At the age of 12 he went to boarding school and was constantly falling in love with good looking boys. He was always taken into one of the bigger boys' bed. At this age he was thoroughly able to enjoy the sexual orgasm with boys. He had learnt the habit of masturbation from his brother at the age of nine; at that time there was no sexual orgasm, but watching his brother so doing rendered him passionate and was a perpetual source of wonder and pleasure. His erotic dreams have always been of men and especially of boys; he has never dreamt sexually of women. From the age of 9 to the age of 21, when he left school, he never gave women a thought sexually, though he always liked their society. For two years after leaving school he had connection with women, not because he thought there was sin in loving his own sex but because he regarded it as a thing that no one did after leaving school. During these two years he still really preferred men and used to admire the figures of soldiers and sailors. He then paid a visit to London which may be describe in his own words: "I went to see an old school-fellow who was living there. In his room was a young fellow, fair, extremely good looking, with a good figure and charming manners. From that moment all my past recollections came back: I could not get him out of my mind; in fact I was in love with him. I pictured him naked before me as a lovely statue; my dreams were frequent at night, always of him. For a fortnight after, I practised masturbation with the picture of his lovely face and form always before me. We became fast friends and from that day women have never entered my thoughts."

Although up to the present he has no wish or intention to marry, he believes that he will eventually do so because it is thought desirable in his profession; but he is quite sure that his love and affection for men and boys will never lessen.

In earlier life he preferred men from 20 to 35; now he

likes boys from 16 upwards, grooms, for instance, who must be good looking, well developed, cleanly and of a loveable unchanging nature; but he would prefer gentleman. He does not care for mere mutual embracing and reciprocal masturbation; when he really loves a man he desires *pædication* in which he is himself the passive subject.

He has curly hair and mustache and well developed sexual organs. His habits are masculine, he has always enjoyed field sports, can swim, ride, drive and skate. At the same time he is devoted to music, can draw and paint, and is an ardent admirer of male statuary. While fond of practical occupations of ever sort, he dislikes anything that is theoretical.

He has thus described his attitude towards the moral questions involved: "As a medical man I fail to see morally any unhealthiness, or anything that nature should be ashamed of, in connection with, and sympathy for men. My own inclinations lead in that way and physically I find it more beneficial, and without the dangers attached to copulation with women. If not carried to excess it is a far more healthy practice than self-abuse which is so much done. And I trust that some day it may be taken up and discussed as a medical question in connection with its benefit to health, both physically and morally, and become a recognized thing."

The next case that I have to present, while belonging to the same group, presents the additional feature that the inversion is complicated. In this respect, so far as I am aware, it stands alone among my cases. The individual in question confesses to a desire to experience physical pain and rough treatment at the sexual climax; this perversion has been called Masochism (after the Austrian Novelist Sacher-Masoch who has often described this state of feeling) by Krafft-Ebing.

XXI An Englishman, aged 34, of no profession. The family history shows nothing abnormal. The family is of German and Italian origin, but settled in England for over a century and marrying Englishwomen. He himself has the appearance of an Italian.

His father's proclivities were very strongly towards women, to such an extent indeed that he became separated from his wife. His sister avoids the society of men and has warm attachments with other women; and he is nearly sure that a cousin is attracted to his own sex.

When only about 8 or 9 years of age he became extremely

attached to a groom and even consulted with his sister as to inducing him to go into a shrubbery in order to play with his person. "I fancy", he remarks, "that there was more than mere curiosity in this, as my attachment was rather romantic, and I take it that this was a foreshadowing of what the sexual proclivities were to be later on in life. Certainly at 14 years of age the sexual love of males began, and I then readily consented to the desire of others, and sought men on my own account. Long before the age of puberty I used to sleep with a pillow on the top of me and found pleasure and source of excitement in imagining it was a man. The pillow episode having happened before any self-abuse had taken place, and at a time when I did not believe that such a thing as emission of semen could take place manually (for I hardly believed what my school-fellows told me) leads me to conclude that in me this habit had nothing to do with self-abuse. I think it was always my natural proclivity."

He has seldom had erotic dreams—"have not given myself the chance of having many"—but when he had such dreams they have been about equally divided between the sexes. But while he enjoys the dreams in which males are the subjects, he dislikes those in which females figure.

He has had intercourse with three women in the course of his life, but simply as a matter of duty in order to see if he could be like other men. He did not like it and it did not seem natural to him. He likes women as friends, and has a very high opinion of their usefulness and goodness, but he never feels inclined to kiss and still less to take any liberties with them. It is scarcely necessary to add that he is unmarried.

He prefers the educated to the uneducated as the limited range of the interests that appeal to the latter make association difficult.

The age preferred is from 18 to 45, or even up to 60. He likes *pædication* to be practised on him but he does not himself care to practice it; *fellatio*, however, he likes either actively or passively, and is also able to satisfy himself by intercrural connection.

While preferring the educated he makes the following interesting remarks concerning his instinctive impulses: "I like soldiers and policemen for the actual sensuality of the moment, but they have so little to talk about that it makes the performance unsatisfactory. I like tall handsome men (the larger they are in stature the better), very strong, and as sensual as I can get them to be, and I like them to

practise *pædicatio* on me, and I prefer it done rather roughly, and I rather prefer men who are carried away by their lust and bite my flesh at the supreme moment, and I rather like the pain inflicted by their teeth, or elsewhere."

He is of medium height, slight, dark and delicate. Quick in movement and in temper. His tastes are artistic and musical; he is a pianist. His habits are sedentary, and he does not care for athletic amusements. He possesses, he declares, great power of devotion and fidelity to one man, with whom he can be very loving, extremely sexual, and correspondingly jealous.

With regard to the moral aspect of the matter he writes:—"I cannot see anything wrong in practising this habit, as long as it is with entire mutual consent. It is certainly less wrong than seducing and ruining women. I daresay, morally and religiously, it would be better to do *nothing at all*, but I take it that that is quite impossible for anyone of my temperament. I always try to make my proclivity bring about good to others, and trust that any help that I can afford them, or any kindness that I can show them, may to some extent mitigate my offence, if there is any offence in it."

PSYCHOSEXUAL HERMAPHRODITISM.

This is the somewhat awkward name given to that form of inversion in which there exists a sexual attraction to both sexes. It is decidedly less common than simple inversion. We are only justified in including within this group those persons who find sexual pleasure and satisfaction both with men and with women, but in more than one of the following cases the homosexual is more powerful than the heterosexual instinct, and it is possible that these should really be regarded as cases of simple inversion. We have to remember that there is every inducement for the sexual invert to cultivate a spurious attraction to the opposite sex. In one case (XXII) the heterosexual instinct seems to have been acquired; in another, however, (XXIII) the homosexual instinct is apparently acquired.

CASE XXII.—So far as is known he is hereditarily healthy on both ancestral sides.

He dates his homosexual desires from puberty. Between the ages of 16 and 20 he practised masturbation to excess. He has never felt much attraction towards women

except in one case which ended (at the age of 25) in marriage. He finds marriage satisfactory on the whole but is not enthusiastic about it.

He is an artist, of good physique but highly nervous. He is sympathetic, very imaginative, regarded by his friends as a simple and beautiful nature somewhat lacking in strength.

Betweem the ages of 16 and 23 he had many love affairs, mostly with boys, but in one or two cases with older men. Since marriage there have been none of at all a serious character. He has in no case practised *pædicatio*.

He regards sexual inversion as in all respects on the same level as normal sexuality.

CASE XXIII.—Age 30, a brain-worker, of moderate physique and nervous temperament not well balanced, rather passionate and jealous but thoroughly good-natured. Both parents of healthy stock, so far as is known.

He practised masturbation to a slight extent about the age of puberty. From the age of 15 or 16 he was strongly attracted to women, and had a constant succession of small love-affairs culminating in a violent one which ended in disappointment. He was then twenty years of age. A few months later the homosexual instinct first showed itself, spontaneously, without any assignable cause. For about a year the normal instinct disappeared, but reappeared and still continues. His homosexual feeling is only for one person and the passion has continued, though not at the white heat of the first year or so, for ten years. His erotic dreams are about males.

He cannot afford to marry but otherwise would probably do so.

He has had no sexual relationship with his friend, although the impulse is very strong. He has been restrained, partly by fear of offence to the other person's feelings and partly by personal scruples. He used to have a horror of such things both in his own case and that of others. He has got over this but still looks on it as doubtful, while freely confessing his own infatuation in this one case.

CASE XXIV.—Englishman, 40 years of age, retired from business. So far as he knows, belongs to a family that is quite normal.

Homosexual desires began at the age of 11 at a small private school, and were afterwards developed at a large public school. He did not practice masturbation. His erotic dreams were connected with individuals of both sexes, but more usually, he thinks, with women. He likes women in

a general way and enjoys their society, but has always had a greater feeling of attraction towards a beautiful youth of 18 or 20 than towards a girl of the same age. He has often had connection with women, but though he liked it, he has always preferred that with men. He has never been able to make up his mind to marry.

When a young boy he liked boys of his own age but as he grew older preferred those aged between 20 and 28, as also he does at present. Those belonging to his own social position, and clerks in business, he likes best, but is not averse at times to servants, sailors and soldiers, provided they are clean, manly, and attractive in voice and manner. His usual method of gratification is intercrural connection, but at times he has been willing to practise *pædicatio*.

He was fond of riding, boating and sports as a boy; he is also fond of music and painting. His chief regret in connection with his homosexual instincts is that he is obliged to lead a double life.

CASE XXV.—Englishmen, aged 22, clerk. A cousin on the mother's side was sexually inverted. The family otherwise normal and long-lived.

As a child he preferred men's society and would rather sit on the knees of men than of women. He does not masturbate. His erotic dreams are usually of men but sometimes of women. He has no aversion for women, but on the contrary great sexual attraction to them, and connection has often taken place successfully, but at the same time he has an equal fondness and sexual liking for males. He could not, he says, remain faithful to any woman, but could certainly remain faithful to a man, and such love would kill desire for women. He has remained quite faithful to one man for three years. He is not married and has no wish for marriage. He is attracted to men of his own age and practises either *pædicatio* or *fellatio*.

In appearance he is broadly built, strong and healthy, and is very fond of athletics in any form.

He has doubts as to whether his feelings are right or wrong, but thinks they are natural to him. He believes that it is certainly no more wrong than sexual intercourse with women.

CASE XXVI.—Englishman, independent means, aged 52, married.

His ancestry is of a complicated character. Some of his mother's forefathers in the last and earlier centuries are supposed to have been inverted.

He remembers liking the caresses of his father's footmen

when he was quite a little boy. He dreams indifferently about men and women and has strong sexual feeling for women. Can copulate but does not insist on this act; there is a tendency to refined voluptuous pleasure. He has been married for many years and there are several children of the marriage.

He is not particular about the class or age of the men he loves. He feels with regard to older men as a woman does, and likes to be caressed by them. He is immensely vain of his physical beauty; he shuns *pärdicatio* and does not much care for the sexual act, but likes long hours of voluptuous communion during which his lover admires him. He feels the beauty of boyhood. At the same time he is much attracted by young girls.

He is decidedly feminine in his dress, manner of walking, love of scents, ornaments and fine things. His body is excessively smooth and white, the hips and buttocks rounded. Genital organs normal. His temperament is feminine, especially in vanity, irritability and petty preoccupations. He is much preoccupied with his personal appearance and fond of admiration; on one occasion he was photographed naked as Bacchus. He is physically and morally courageous. He has a genius for poetry and speculation with a tendency to mysticism.

He feels the discord between his love for men and society, also between it and his love for his wife. He regards it as in part, at least, hereditary and inborn in him.

Herewith I conclude this series of cases. That it may not be desirable to multiply the records of such cases I most willingly admit. But inasmuch as—if we put aside my own paper on inversion in women published in this journal last year—not a single British case of inversion, outside asylums and prisons, seems yet to have been brought forward, it was clearly desirable to illustrate an unrecorded aspect of this psychic abnormality. I do not here enter into any general considerations regarding the nature of sexual inversion, since I have elsewhere done so, in a paper read before the International Medico-Legal Congress, at New York, in 1895, and also in a paper published in the *Centralblatt für Nervenheilkunde*, Feb., 1896. Certain remarks concerning the treatment of sexual inversion, and also concerning the attitude of the law towards this perversion, I hope to publish on some future occasion.

The Minute Anatomy of the Human Pons Varolii.*

Notes by DR. ERCOLE PUSATERI.

THE researches, the results of which we are about to present, were conducted on human foeti of five, six and seven months, on new-born infants and on children of from one to two years of age. The methods made use of were first, the Golgi-Mondino reaction with bichloride of mercury; second, Golgi's mixed method and third, Cox's method.

Here briefly are the results:

1. GRAY MATTER OF THE PONS.—The cells of the gray matter occupy the space between the superficial transverse fibres and the internal, being situated between the interstices of the transverse fibres of the pons and the fasciculi of the pyramidal tract. They belong to Golgi's first type, having a small cell body of various forms (fusiform, triangular, stellate, globular, spherical, and atypical) furnished with short and ramifying protoplasmic extensions; the nerve prolongations are distributed in different ways, some are carried to the median cerebellar peduncle of the same side and some, traversing the raphé, to the median cerebellar peduncle on the opposite side. There are, besides, cells situated chiefly in the vicinity of the raphé and sometimes on the raphé itself, the nerve prolongations of which pass directly into the ventral portion of the raphé, thus gaining the name of the *tegmentum pontis*. The size of the sections did not permit me to ascertain the final destination of the nerve processes of the cells of the gray matter; I believe, however, that the nerve cylinders, ascending by means of the median peduncles to the cerebellar cortex, go to form the twining fibres which surround the protoplasmic branches of Purkinje's cells.

*Translated from *Revista di Patologia nervosa e mentale*, Jan., 1896, by Susanna P. Boyle, M.D., C.M., Toronto, Canada.

II. COLLATERAL FIBRES OF THE PYRAMIDAL FASCICULUS.—The fibres of the pyramidal fasciculus in their passage across the protuberance give off *direct* and *crossed* branches which terminate by ramifying among the elements of the *substantia grisea pontis*. These collateral fibres interlace in various ways with each other and form a remarkable network, in the meshes of which are situated the cellular elements. I especially noticed the contiguity of the small branches of the collateral fibres of the pyramidal fasciculus and the protoplasmic processes of the elements of the gray matter of the pons. By the fibres of the pyramidal fasciculus then, there is established an interesting connection, partly *direct* and partly *crossed*, between the motor zone of the cerebrum and the cerebellar cortex; by this means, perhaps, motor excitants reach the cerebellar cortex, being afterwards passed on to the motor nuclei of the medulla and cord by means of the efferent cerebellar tracts.

III. MEDIAN CEREBELLAR PEDUNCLE.—As regards the cerebellar cortex, the fibres of the *pedunculus medius* may be divided into ascending and descending. The ascending fibres are made up of processes of cells in the gray matter of the pons, while the descending represent largely the cylinders of the cells of Purkinje. The descending fibres are distributed, at least in part, in the following way,—some cross the raphé to terminate by ramifying among the elements of the gray matter of the opposite side, some end by branching in the gray matter of the same side. There are besides fibres of the median peduncle belonging to the *stratum profundum* and *complexum pontis* which pass, either directly or after being crossed in the raphé, to the tegmentum, by means of the raphé, traversing the bundles of the internal lemniscus and the space interposed between the internal lemniscus and the raphé. Having reached the level of the *tegmentum* they form in part some *fibrae arcuatae internae* and partly ascend along the raphé to take part in the formation of the *fasciculus medianus*. One set of these fibres terminates by ramifying among the elements of the *tegmentum*. By this means is established a connection, partly direct, partly

crossed between the cerebellum and the nuclei of the *tegmentum pontis* which I propose to call *the direct path from the cerebellum to the nuclei of the tegmentum pontis*.

IV. INTERNAL FASCICULUS OF THE PES PEDUNCULI.—As is known, the fibres of the internal portion of the *pes pedunculi* originate partly from the Rolandic and frontal opercula. In some sections made across the internal part of the *pes pedunculi* and protuberances, I observed that at least one part of the anterior *cortex-protuberance fibres* terminated by ramifying among the elements of the gray matter of the same side. By this system of fibres and the gray matter there, we have established a path of communication between the frontal and Rolandic opercula of the brain and the cerebellar cortex. I do not believe, however, that these are all the connections between the anterior *cortex-protuberance fasciculus* and other parts of the nervous system, ignoring as we have done the connections between the elements of the gray matter.

V. GRAY RETICULAR SUBSTANCE OF THE TEGMENTUM.—The cells of the reticular substance of the *tegmentum* belong to Golgi's first type. According to size, they may be divided into giant cells, median-sized and small cells, the cell body being of different shapes (triangular, stellate, fusiform) and giving origin to strong and long protoplasmic processes which partly run horizontally among the fibres of the *fibre arcuatae internae*. The protoplasmic processes of cells situated in proximity to the raphé often pass across this, ramifying at great distances from the cell-body in the *substantia reticularis* of the opposite side; we have thus formed, corresponding to the *tegmentum* and extending almost the whole length of the raphé, a protoplasmic commissure.

The cylinders of the cells of the *substantia reticularis*, partly cross the raphé, partly go in an opposite direction, forming some *fibræ arcuatae internæ*. There are, however, some cells situated near the raphé, the cylinders from which pass across the floor of the fourth ventricle together with the fibres of the median fasciculus.

In sections of the protuberance and cerebral peduncle

there were observed some cells the nervous prolongations of which passed to the *tegmentum pedunculi*.

VI. COLLATERAL FIBRES OF THE POSTERIOR LONGITUDINAL FASCICULUS.—Corresponding to the *tegmentum pontis*, the fibres of the posterior longitudinal fasciculus give origin to collateral ramifications which partly pass to the *nucleus funiculi teretes*, and partly to the elements, of the *substancia reticularis segmenti pontis* and to the *nucleus reticularis segmenti* of Bechterew.

VII. NEUROGLIA.—The elements of the neuroglia of the protuberance may be divided into:—

1 Cells with long processes (macroasteroid gliocytes of Retzius).

2 Cells with short mossy processes (brachiasteroid gliocytes of Retzius).

3 Caudate cells (ureide gliocytes of Retzius, caudate glia cells of Andrienzen).

These last have a globular cell body which is in contact with the pia, and gives origin to a tuft of long and fine processes which pass to the deeper parts of the pons. Among the elements of the neuroglia of the protuberance are the mossy cells surrounding by their fine processes the bodies of the cells of the gray matter.

QUEBRACHO IN MELANCHOLIA AND STUPOROUS STATES.

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PENZOLDT found that quebracho and its alkaloids had a very decided effect in small doses in increasing fullness and frequency of the respiration. In melancholia, stuporous insanity and certain phases of depression which marks other psychoses the cerebral disease seems (to use Clouston's words) to exert an inhibitory action on cardio-motor innervation causing the pulse to be small, the arterial tone low and the capillary circulation very weak indeed, and in many cases there are very decided thoracic symptoms accompanied by mental distress resembling attacks of suffocation accompanied by precordial fright as it has been termed.

This opinion of Clouston was based partly on an experience common to every observant alienist, and partly on the results of Meynert* who points out that residual images would not furnish adequate motives for our movements and deeds if the phenomena of feeling were not inherent in them. To the reflex of sucking may be applied the term reflex of aggression; to that of vomiting, reflex of rejection or repulsion. The conscious movements based on these reflexes are termed respectively movements of aggression and repulsion. These resulted from association with the ideas of satiation and injury. Such concepts are not mere passive

*Psychiatry. Sachs' Translation.

reproductions of former images, but their reproduction is attended by a degree of intensity which is termed emotion. In both cases the emotion varied, producing pleasure in the one case and pain in the other. A pleasurable emotion gives rise to movements of aggression, a painful emotion to movements of repulsion. Possibly we may be better able to fathom the different degrees of emotion or feelings by following a more complicated though physiological train of thought and omitting psychological definitions altogether. Our understanding may be furthered by a series of facts including more than mere bodily pain and the reflex of repulsion; for we have to consider a movement accompanying the latter and affecting the arteries of the central organ and the connection of this correlated movement with the change in chemical relations, phenomena which are at the foundation of all nerve phenomena. It will answer our present purpose to designate these chemical relations by the short expression: respiration of nerve-cells.

The solution of this problem would be reached by continuing the line of thought and by proving that the conjoined processes above referred to are already associated in the cortex as secondary processes with others involved in the mechanism of reviving association images or concepts. Even though a decapitated frog responds to pinching of his skin with a kicking repulsive movement, there is no need of supposing that a sensation of skin preceded this act. Nor are we compelled to regard the condition of the cutaneous irritant to the muscles as the only process here set up, to which, if the brain had not been removed, sensation would have been added. We must remember rather that every sensory act produces a number of secondary effects acting upon the central nervous organ and that such secondary effects in default of fore-brain consciousness are nothing more than the consequence of an irritation which would be adequate to the excitation of pain.

The experiments of Schiff and others have shown that in animals, in which the conduction through gray substance has been impaired by excitement or otherwise, cutaneous irritation produces simply tactile or thermal sensations; in

spite of the adequate nature of the irritation (burning) and the presence of the fore-brain, there is no sensation of pain. To this changed condition of irritability is applied the term analgesia. We know, furthermore, that nerve conduction, through the net work of gray substance, meets with a certain resistance which can be gauged by the time which elapses in the transmission of a peripheral impulse. With an increase in the number of muscular groups excited to action by a reflex irritant, an increase in the resistance to nerve-conduction results. The irradiation of any irritation so as to involve a large number of muscular groups, say those of the side opposite the cutaneous irritation, will depend upon the duration and intensity of the latter and will have an influence upon the character of the pain sensation resulting from said irritation. The sensation of pain therefore is attended both by a reflex movement and by an inhibition of nerve-conduction in the gray substance of the spinal cord. The strength of the resistance to be overcome in the case of motor irradiation increases even in the case of the unconscious decapitated frog with the duration and intensity of the irritating cause. It is evident that the inhibition resulting from resistance introduced in nerve tracts accompanies the simplest reflex processes, while consciousness in the main recognizes this inhibition as pain. Inhibition involves the question of retardation in the conduction of reflex nervous impulses. A nervous impulse takes, according to Holmholtz, about twelve times as long to travel through the gray substances as it does to be transmitted through the peripheral nerves. Transverse conduction largely increases the time required for the reflex act, as when a stimulus applied to the one side is to excite the muscles of the other side.

According to Exner, the stronger the stimuli the less the amount of time required to effect a reflex action.

Irritation of a sensory nerve excites in decapitated animals not only a repulsive movement of the skeleton muscles, but exerts an influence also over the circular muscular apparatus of blood-vessels, the centres for which are located in the spinal gray matter. The ex- and intensity of this influence vary directly with the amount of

irradiation of the original stimulant impulse. The dilatation of the blood-vessels in the web of a frog's foot continues steadily to increase as layer after layer of the spinal cord is removed. Goltz has demonstrated the functional activity of the spinal vaso-motor centres in mammals, and W. Schlesinger has proved their presence by experiments with strychnia. We are justified in inferring that repulsive movement is attended by a reflex contraction of the spinal-cord arteries, similar to the one which takes place in normal animals and which is observed to result from an increase of blood pressure in the carotid after the application of strong sensory stimuli. The rise of blood pressure in the carotid following sensory stimulation was measured by Owsjannikow and Dittmar with the use of the manometer. This increase of pressure depends upon reflex contraction of the arteries. In this way physical pain produces swooning and explains why in former centuries when a confession was extorted in court by torture, the person incriminated would fall asleep while undergoing the pangs of the rack. Dittmar believes that there is no better proof of the presence of sensory process in animals than the rise of the blood column in the manometer following upon external stimulations and that this increase of manometrical pressure is caused by the reflex vaso-motor constriction set up by the excitation of sensory nerves. The contraction of the arteries by impeding the respiration of the nervous elements must necessarily engender a dyspnætic phase of nutrition, it will modify the chemical changes going on in these elements and as a further result of this the sensory stimulus is associated with the irritation resulting from a certain degree of dyspnætic intoxication. Dyspnæa of tissue is alone sufficient to excite repulsive movements, inspiration is the most ordinary form of repulsive movement evoked by a dyspnætic stimulus which in extreme cases may by irradiation involve a number of muscles. But this dyspnætic stimulus results not only from defective breathing, but also from increased arterial pressure as in convulsions or from arterial contraction as in anaemia. The convulsions occurring in persons bleeding to death are an instance of the latter kind. The respiratory

centres extend, according to Professor Rokitansky, into the cervical portion of the spinal cord.

From what has just been said it results that even in the spinal cord of decapitated animals movements of repulsion are connected with sensory excitation, inhibition of nerve-conduction, increased arterial pressure and with dyspnoëtic stimulation of nerve cells.

Movements of aggression also can be demonstrated in animals that have forfeited the pros- and di-encephalon and indeed in animals which have retained the spinal cord only. Goltz remarks: "If on a fine summer's evening we hear the croaking of the frogs we conclude correctly enough that these inhabitants of the marshes are thoroughly happy in the enjoyment of the tepid water. We infer the same cheerful spirit when we observe the playful aggressive movements of a cat engaged in pushing a ball or a mouse before it and always endeavoring to recapture it, when we see animals frolicking and tumbling about incessantly on the grass and in the open air or birds that give expression to their mirthful restlessness by their songs and direct their aggressive movements upon crumbs, seeds or worms. All these convey the same impression to our minds. As soon as a stone is thrown into the pool the frogs cease their croaking in view of the danger to which they are exposed; an enemy suddenly appearing before animals that have been tumbling about in the full enjoyment of their liberty, will cause them to hide themselves or to start movement or repulsion by taking to flight." The unhampered purposeless movement of a lively animal; the song of a bird, the merry bark of a dog are in reality movements of aggression. Goltz has excited similar movements of aggression in decapitated animals, such movements indicating a certain selfconsciousness attended by undoubted pleasurable sensations. He was able to elicit the croaking of the frogs and aggressive movements of clenching the female as in the sexual act. The stimuli which Goltz had to apply in this instance differed materially in character from those which elicit repulsive movements. The effective stimuli were of a gentle sensory and non-painful character. Gentle friction

between the shoulder blades sufficed to provoke a croak in frogs deprived of their fore-brains and (slight) pressure brought to bear on or friction of the breast and flexor surface of the arms was followed by an embrace of anything which had been placed within reach of the arms. The transmission of such gentle stimuli, through reflex gray substance, could not take place in the face of any great resistance and, being permitted, it compels the assumption of the existence of a distinct centre which is reached at once by external stimuli. The "centre" excited in the croak experiment lies in the mesencephalon while the reflex centre for the sexual embrace in male frogs must be located in the cervical portion of the spinal cord. The term "embracing spasm" will do justice to the powerful muscular action resulting probably from a hyperæsthesia of the frog's spinal cord produced during heat by the nerves of the testicles, but existing for some time after the removal of the testicles.

The exciting cutaneous stimulus need be merely of the slight, unpainful intensity mentioned above. Hence, even in the case of frogs that are brainless as far as consciousness is concerned, the correlated effects (in the central organ) of aggressive movement and the accompanying circumstances differ from those attending repulsive movements with which consciousness associates the sensation of pain. These two orders of correlated secondary effects are on the whole diametrically opposed to one another.

I. The stimuli are gentle and not painful, they must be conveyed to certain centres direct without irradiating and without overcoming any resistance or inhibition. In the sexual spasm of the frog the conduction of nerve force was assisted and not inhibited by a periodic increase in the excitability of the centre. Just as the consciousness of a painful impression is based upon or is attended by inhibition of nerve impulses, so the consciousness of a pleasurable impression is attended by the free transmission of nerve forces.

II. In the one case the irradiation of a stimulus adapted to the excitation of pain sets up activity in the centre for the vaso-constrictors followed by increased arterial pressure

and active arterial anaemia as concomitants of repulsive movements, and in the other case there is no irradiation produced by external stimuli, no inhibition and no increase in arterial pressure accompanying aggressive movements. The movements of aggression are associated with a diminution of blood pressure, a dilatation of the arteries entailing the so-called functional hyperæmia. Dittmar's opinion that increased arterial pressure keeps step with the progress of sensation does evidently not apply to the generation of aggressive movements. The functional arterial dilation necessarily produce an apnoëtic phase in consequence of the increased tissue-breathing of the nervous elements and brings about a chemical change also differing from the one effected by a painful stimulus which called forth a dyspnœtic phase of nutrition of these elements. The antitheses are suggested by the fact that in the reflex centres, aggressive and repulsive movements inhibited one another because of the different processes set up by the order of movements or the other. Goltz has shown that the ordinary croak cannot be elicited if painful stimuli be simultaneously applied and that the sexual spasm will be inhibited if any part of the frog's body be at the same time touched with acetic acid. And on the other hand the great excitability of the sexual spinal cord centre under the influence of the testicle-nerves may, during the period of heat, inhibit the repulsive movements which would follow painful stimuli were they not inflicted during the sexual act.

But have we any facts which will enable us to say whether the same accompaniment of vaso-motor innervation of differences in the chemical changes of nutrition, attends the secondary mechanism of conscious movements incited and set into action by subcortical reflex acts which (movement) are based upon the revival of cortical images and are effected through the mediation of association tracts and who will say whether, among the impulses of the *ego* and within the bounds of free will, we shall be able to discover and to discriminate between a series of repulsive movements which had to overcome a resistance to nerve conduction and aggressive movements which have had free passage through

the nerve tracts engaged in their excitation or transmission.

Although it has been shown that the great expanse of cortical surface favors the restriction of certain functions to certain localities it is certain that, apart from the association through the arciform bundles and on the supposition that its gray substance represents a network of gray fibres, the condition of its structure permits the irradiation of stronger stimuli, as is the case in the spinal cord and the remainder of the central gray substance. Association and irradiation are two very different processes. The process of irradiation, in the cortex interferes seriously with that of association. As in the spinal cord so in the cortex, vaso-constrictor nerves will be excited by an irradiating sensory stimulus. Eulenberg and Landois as well as Hitzig have shown that upon stimulation of the cortex the extremities of the opposite side grow cooler through arterial constriction and upon removal of the cortex the temperature of the parts increase (Hitzig) so markedly thorough arterial dilatation that it can be discerned by the hand placed upon the extremity of a dog so operated upon and without the corroborative evidence of a thermometer.

Let us take up the case in which a brainless frog exposed to an intense sensory impression (pinching with forceps) and displaying an inhibition sufficient to overcome the stimulus. We then discuss the influence of the stimulus upon the vaso-motor nerves and the repulsive movements executed by motor nerves, but let us vary the example by supposing an animal to be in full possession of its brain. A person who has been teased with forceps or who has undergone the pangs of an operation will recognize this intense irritation as an impossible (unbearable) act of perception. Evidently irradiation meets with severe and widespread resistances in the gray substance of the cortex as well as in the central gray substance. In this respect the pain answers to a sensation of inhibition. The inhibition obstruction, the path of this irradiating stimulus, calls for an exhausting amount of excitation and this effects inhibition of other cortical functions and sets a limit to the activity of the cortex, it inhibits attention, thought and the

association of ideas as well. Secondary conscious movements of repulsion are incited to ward off the hands of instruments that have inflicted the torture. As concomitant conditions, we get paleness, nausea, loss of consciousness, together with slowness of pulse, with or without convulsions or unconsciousness, together with rapid pulse and universal convulsions.

Loss of consciousness attended by nausea and slowness of pulse may be ascribed to irradiation affecting the vagus, the cerebral nerves of the heart and to anaemia of the brain, due to the suppression of the systole.

Restricting the field of discussion to the above mentioned facts of experimental physiology as evidence of the vasoconstrictor influence of the stimulated cortex and reserving other striking proofs of the fact for the clinical chapters of this book, enough has been said to indicate, from the importance of the cortex as a vaso-motor centre and from the above mentioned relation between strong sensory impression and an increase of blood pressure, that the conduction of strong sensory stimuli into consciousness (into the cortical gray) increases the arterial pressure and arterial constriction thus setting up active anaemia. Whether this leads to actual unconsciousness or not, the sensation of pain is associated with increased narrowing of the arteries. But contraction of the arteries implies a chemical change the dyspnœtic phase of prosencephalic nutrition and united to the latter the disagreeable sensation of pain. This is the less hypothetical, inasmuch as external chemical changes such as accompany difficulty of respiration in impure air are attended by a sensation of discomfort and restlessness leading to repulsive movements, loss of consciousness even to swooning with convulsions. It has been shown, therefore, that strong sensory stimuli excite in a reflex way, conscious movements of repulsion and in originating sensation of pain introduce inhibition, arterial contraction and dyspnoea of the fore-brain elements. It is not alone the perception of actual pain which incites movements of repulsion, but the mere sight or touch of, or a sound from, objects which are associated in the fore-brain with the idea of pain, danger or

death, as the pain itself, movements of repulsion and create in the cerebral cortex all the conditions of subjective torture, concomitants of real pain. If the mere sight of the sharp end of a knife, of loaded fire-arms, of a wild animal let loose, of a fire, a corpse, an operation on others, or the sight of blood suffice to produce loss of consciousness or swooning attended by the sensation of inhibition of thought or impels the witness to take to flight, we must suppose that our ideas of pain are intimately connected with the revival of reminiscence of these objects and that this subjective pain is of sufficient intensity to arouse all the correlated physiological sensation accompanying genuine objective pain; namely, inhibition, increased arterial pressure, dyspneic phase of nutrition and repulsion. Referring again to the former example of the consciousness of an intense sensory irritation upon the spinal cord we observed that the entire complicated primary form of the reflex mechanism is transmitted secondarily to the fore-brain. The instance cited referred to associations started by the actual perception of objects calculated to produce pain, but the momentary painful stimulus was lacking. Physiologically speaking, the stimulus bears a special characteristic sign resulting from the excitation of their terminal apparatus; among such signs may be classed cutaneous irritants, dazzling light, unusually strong waves of sound, etc. Pain is classified with the feelings but it is distinguished from sensory perceptions by its widespread irradiation which interferes with localization.

Feelings without physical pain are termed emotions. We are here concerned with painful emotion, psychical pain. That painful emotions depend solely upon associations, upon inference pointing to the perception of pain, can be proven by a simple analysis of the objects which excite pain. The retinal images of a tame and of a wild animal, of an indifferent person or of one whom we fear, are projected upon the same retinal area, possess the same color and the same intensity of light. An indifferent red fluid and blood leave the same impression upon the retina. Mere percept itself cannot excite emotion but the association united to the former can. It is therefore the mechanism of the hemi-

sphere only the process of thought which excites physical pain and movements of repulsion, as well as the arterial contraction, which may terminate in swooning and in engendering fear and feeling of incapacity of action. Marked inhibition of nervous impulses from the fore-brain excites like the inhibited conduction of painful sensory stimuli or the suggestion of torture, a concept of the impossibility of counteracting this inhibition which may ultimately lead to suicide. A physiological process occupying much time and consisting in the dissolution of now purposeless associations and the formation of new ones, precedes the introduction of this death news to the web of associations. Inhibition is attended by emotion and physical pain. With inhibition and physical pain there is connected an increase of arterial pressure which, during an emotion, may, by mere presentation to the mind, produce swooning. Inhibition or resistance on the lines of nerve conduction through the gray substance as well as increased arterial pressure in consequence of strong sensory impression are physiological facts.

Lastly that the impoverishment of the brain substance in oxygen has the effect of a chemical irritant which excites dyspnoetic respiration in the oblongata and produces epileptic changes in the so-called convulsions centres, is a well established physiological fact. Since increased arterial pressure, even in the cortex, produces an improvement in oxygen, a dyspnoetic phase of nutrition will be set up in the cortex as soon as the conditions of painful sensations exist. Sensation itself is the subjective form of perception of all these physiological processes; as it were, the expression of a special sense concerned with the nutritive phase of the cortex.

Meynert's reference to swooning under torture is an apt illustration of the relation of the depressed to the stuporous states. For the reasons outlined by Meynert and Clouston quebracho would seem to be indicated in melancholia and psychoses mentioned. While aware of the theoretical basis for the use of quebracho in psychoses named, my attention was attracted to its value in a case of what seemed to be a case of melancholia with the facies,

capillary circulation and emotional depression well marked. The patient, a woman, had phthisis and had been deserted by her husband. She ran down rapidly and at one time seemed almost moribund from dyspnœa. To relieve this, quebracho in half drachm doses every two hours was given with very beneficial results on the dyspnœa not only, but also on the patient's mental condition. She seemed markedly to rally from her depression and the facies and depression of melancholia disappeared, but a new type of insanity made its appearance and it was found on careful investigation that the patient had had systematized delusions of grandeur for several years before being suspected of any mental disease and that, therefore, the melancholia was a complication of a pre-existing paranoia which had not been suspected.

Guided by the results in this case quebracho was given in cases of melancholia accompanied by precordial pain with decidedly beneficial results. In stuporous states very similar results were obtained.

The method usually employed was first the quebracho given in the way described. After two weeks the following is employed:

- Rx Ex. Fl. cannabis ind.,
- Ex. Fl. piscidiæ erythrinæ,
- Ex. Fl. cocæ, each 3 parts.
- Ex. Fl. kolæ,
- Ex. Fl. quebracho,
- Tr. sumbul, each 5 parts.
- Laxative Mixture, 60 parts.
- The dose is a teaspoonful.

The laxative mixture has the following composition:

- Rx Fl. ex. Buckthorn bark, four ounces.
- Potass. et soda tartrate, eight ounces.
- Syrup, two ounces.
- Tr. Nucis Vomicæ, two ounces.
- Elixir to make a pint.
- The dose is one to four teaspoonfuls.

INSANITY IN RELATION TO CRIMINAL RESPONSIBILITY.*

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IN opening a discussion on insanity in relation to criminal responsibility, I cannot help feeling that the task which I have undertaken is as likely to be barren of profit as of novelty. There is little, if anything, to be said that has not been said over and over again. For, in spite of its proved unscientific basis and its condemnation from time to time by eminent judges, the legal criterion of responsibility is still in full vigour.

There are few, if any, medical men having practical knowledge of the insane who would assent to the proposition, understood in its natural sense, that an insane person is fully responsible for what he does when he knows the nature of his act, and that it is a wrong act. The saddest cases of melancholic anguish to be seen are those in which the sufferer is tormented with a horrible impulse to do, and perhaps does, what he knows and loathes as wrong; the driving impulse in him so strange and contrary to his true nature and desire, so repugnant, yet so compulsive, that in olden times it seemed explicable only as a positive possession by the devil or other evil spirit. As I have said of it elsewhere, the basis on which the legal criterion rests is simple enough—that a man in convulsions is a strong man, and is culpable if, being conscious of them, he does not stop them. Consciousness of, is assumed to mean power to con-

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trol, the mad impulses of a deranged mind; a will insensible to the influence of legal sanction to be the same thing as a will capable of being influenced by it. The theory would have exacted from the man who knew himself possessed by the devil, and thus dispossessed of himself, that he should possess himself all the same and master the evil in him, or else suffer punishment for the devil's doings. A rather unequal contest that: the man against the devil, with the devil in possession of the citadel of the man's being. Put the word disease in place of the word devil, and you have the exact situation of the modern madman in relation to the legal test.

The test has its foundation, however, only it is laid in wrong observation and bad psychology. The observation is self-observation by sane minds, and its natural result is the fixing of the sane standard of feeling and action as the measure of insane feeling and action. Could anything be more absurd? Surely the right method would be self-observation in abnormal, not in normal, mental states—in dreams, in hypnotism, in allied, disintegrate states; their mental disintegrations furnish the proper standard of comparison for the vagaries of insane thought and feeling. Now I venture to say that no one who reflects sincerely on his own experience in dreams, remembering how strangely he thinks and feels in them, and how entirely he loses possession of himself, can believe that a madman is responsible for what he feels and does in the waking nightmare which madness sometimes is.

Then again the psychology of the legal test is at fault. It assumes, at any rate its defenders sometimes assume, that reason is the motive force of human action—that is to say, for example, that people fall in love from reason, and, when in love, embrace from reason, and after due embraces, proceed further in the business from reason? Is not that again a pretty absurdity? How many times has feeling its reason which reason cannot fathom. The driving impulse by which men are moved to act comes from feeling, not reason; disordered feeling, therefore, is quite capable of actuating the most disordered action without consent of,

perhaps directly against reason. Had mankind been moved by reason in their awful travail through the ages, they would not have been where they are now. For it is in the heart, not in the head, that their deepest faiths are rooted; and he does an ill service to religious faiths who strives to base them on the feeble apprehensions of the human reason. A psychology which finds the motive power of action in knowledge might be likened to a science which should find the cause of the tidal movements not in the moon but in the moonshine.

But it may be contended that reason, though it supply not the motive force of action, can still control and guide it. That is so no doubt with measure. Let reason and feeling be wed in fit harmony, if possible, since they are the two elements of will, and cannot do without one another, reason without feeling being impotent to act and feeling without reason being tyrannical in act. It is not true, however, that reason can always control the desire when it knows its good or bad quality and can appreciate the right or wrong of it. A mad desire is sometimes mad enough to have its convulsive way in defiance of reason. Nevertheless, though that is what experience says plainly, legal theory will not have it so; it maintains that when reason fails to check a mad desire it is not sound reason really, knows not then truly what it seems to know and thinks it knows; the person had not actually the untainted consciousness of right and wrong in the particular case or on the particular occasion. His act fell short of being a full crime, not because reason did not consent, but because reason was so infected itself without knowing it as not to dissent effectually. To save a beloved theory we are asked to give large and liberal interpretation to the word "know," to make it mean what, on the face of it, it does not mean, and to read into a person's consciousness a vitiation of which there is no evidence —to say, as the late Sir James Stephen would have us say, that if a man cannot control himself he does not properly know the nature of his act. So far as this somewhat strained subtlety of interpretation serves to prevent a madman from being punished for a crime which not he but his madness

has done, it deserves praise; but when it operates to get him punished for what his madness does, to get him hanged perhaps for being mad, it is not praiseworthy. The test is too metaphysical for use, even if it were true.

No person, however acute, can dive into the depths of another person's mind and know, what he does not know himself, how far his consciousness of right and wrong is vitiated on a particular occasion; and it is certain that when a common jury is asked to make the delicate appreciation they are not likely to trouble themselves with a subtle metaphysical interpretation. They will understand it in rough-and-ready fashion to mean that if he knew what he was doing, not the quality of what he was doing, he was responsible.

Why, then, maintain a test so hard to understand and so easy to misunderstand, so false in science and so uncertain in application, so often interpreted in different ways by different judges, and not always interpreted twice in the same way by the same judge? Why wrongly bias the judgment of the jury by an express prejudgment of facts which ought to be left impartially to them to weigh and judge? Such a prejudgment is essentially prejudice and the legal reverence which it receives no better than superstition.

Moreover, it is a procedure of doubtful legality. For what right in law has the judge to lay down a particular test of disabling mental disease? Is not that a usurpation on his part, an abuse of law? Are not all the symptoms of mental disease and all the tests of its existence and of its degree of existence in a particular case properly facts for the jury? If so, the express imposition of a special test is an interference with the province of the jury; and, as Mr. Justice Maule foresaw when he dissented in the famous conclave of judges, prejudicial to a fair trial. What the judge does by imposing his test is to instruct the jury wrongly on a matter of fact which it is their function, not his, to judge; by an allegation of fact which is not fact, he gives false evidence as a witness without submitting himself to cross-examination. A particular test of disabling insanity is no more a matter of law than the test of a particular poison; it is rightly a

matter to be proved in evidence in the particular case, like other relevant facts.

So far from being a help to the jury in a difficult inquiry then, the judicial dictum confounds and misleads them. Were the court sincerely minded to help, it might do it in a better way than by a difficult and dubious test of disabling mental disease. It might take means to inform the jury fully and truly concerning the nature of the particular form of mental disorder in question and the extent of its damaging effects on the mind, either by providing them with impartial and competent scientific evidence, called by the court itself, or by appointing a competent scientific authority to assess the value of the scientific evidence given. To a body of men who understand not even the terms used, the opinions of opposing experts which a competent assessor would easily estimate at their proper value, are equally valueless. What an absurdity it would seem, had not custom made it seem natural, as custom will make anything natural, to expect a judge and jury, ignorant of the very elements of chemistry and electricity, to be so adequately instructed by what they hear during the course of a trial as to decide rightly a difficult question of chemical or electrical science. If it be a question of navigation when two vessels have come into collision, about which every juryman who has been in a boat might be expected to know something, the services of a skilled assessor are called in; but if it be a question of complex science, of which the jury-men know absolutely nothing, it is left to the intuition of ignorance to give understanding. What is the result? That the issue would be decided quite as justly, perhaps more justly on the whole, by the toss-up of a penny, without the tedious solemnity of wasted talk and time.

Of the judicial test of responsibility in particular, and of the method of legal procedure in general, we may justly say that they are very ill-fitted to find out the truth, very well fitted not to find it out. In summary, the charges against them are these:

1. The court has no more right in law to set up a special test of responsibility in a case of mental disease

than to set a particular chemical test in a case of poisoning.

2. To do this is really to give important evidence to the jury without permitting the evidence to be cross-examined or contradicted.

3. The evidence so given is bad, for the test is wrong in fact and based on unsound psychology.

4. It can be made decently workable only by construing it in a non-natural sense, and ordaining that the words which say one thing clearly, shall mean another thing obscurely.

5. The court makes no provision to obtain impartial scientific evidence, but requires or allows the parties in the case to ransack the medical highways and by-ways in order to obtain contradictory evidence with which to confound a jury ignorant of its meaning.

This condemnation of the present system of procedure may claim the assent not of the medical men only, but of the common sense and conscience of the community, which, after all, is actually in a sort of tacit rebellion against it. For what happens now when a person about whose mental state there is some doubt, is condemned to death? Why, that the competent medical knowledge is summoned to give the impartial help which ought to have been given at the trial—perhaps to undo quietly in private the wrong which has been done with all the pomp of justice in public. Nay, more I notice from time to time nowadays that an insane person accused of crime is not put on his trial at all, but that some one in authority has, or usurps the right to have him examined medically and sent to an asylum. Thus is the Englishman robbed of what he cherishes as his blessed privilege—the right to be tried by a jury when he is charged with crime. On mere medical evidence that he is mad he is shut up for life because of an offence for which he can never get himself tried.

So much by way of criticism from the medical standpoint. Now let me try to look at the matter from the legal standpoint. Lawyers think that medical men are too ready to discover insanity when crime has been done and to claim irresponsibility for everybody who suffers from any sort and

degree of insanity—in fact, to make all crime insanity, not entirely without excuse. They judge by what they see in courts of justice; and what they see is that there is no case, however weak and indefensible, that does not, for some reason or other, obtain medical support. They put down, therefore, to unsound medical theory what is really unsound medical evidence—which, obtained, perhaps, by hook or crook under the present fashion of procedure, any competent medical authority would assess and reject as worthless. They hear the opinion of him who presses forward to give it; they do not hear the opinion of those who, having been urgently asked, refused to give it. Naturally, therefore, they conclude one of two things: either that there is no such thing as exact medical science or no such thing as exact medical honesty. The result is that expert scientific evidence, which should be decisive, has the least credit of any kind of evidence given in a court of justice. For this discredit, law is not to blame; its blame is that, knowing the weakness of human nature, it maintains a system of procedure which makes it inevitable.

Another circumstance which justifies legal criticism is the common medical habit of discussing the question of responsibility in relation to insanity in the abstract, as if insanity were some definite and constant entity, something which is altogether or not at all, and, being there, ought to exculpate entirely. One might just as well discuss whether bodily disease in the abstract ought to prevent a man from walking ten miles a day. The truth, of course, is that there is no such definite morbid entity as insanity—that there are really as many insanities of mind as there are degrees and kinds of derangement of it. It is with insanity in the concrete and particularly that we have properly to do; and just as bodily ills ought to, and another ought not to, prevent a man from walking, or from doing one thing while he does another, so one insanity of mind abolishes entirely a responsibility which another does not. The right question is the disabling effect of the particular mental disorder in the particular circumstances—a question to be decided by full, impartial, and competent consideration of

all the facts of the case, by a consideration, that is, fitly instructed to appreciate their nature and bearing, as now by incompetent consideration expressly misinstructed.

Time would not serve now to discuss the degrees of disabling moral and intellectual damage done by the various forms of mental disorder, some of which after all are not so much states of actual disease as bad habits of thinking and feeling grown into deformities. What I venture to make here is a protest against the assumption that insanity in the abstract—meaning thereby all insanities of whatever sort and degree—should offhand be deemed irresponsible. And I take or make the occasion to utter another protest—a protest against the lamentable extravagances into which the latest school of criminology has been betrayed. I should be loth to say a word to discredit the scientific method of studying crime and criminals or to disparage for a moment the good work which has been done; but of unripe observations and sensational theories, I hope it is not too much to say that, though they make the vulgar stare, they make the judicious grieve. Science on the platform, like philanthropy on the platform, runs no little risk of demoralization; the performers are under a strong temptation to play to the gallery and burlesque science.

To say that there is a criminal nature which is degenerate is one thing, but to go on to say that all criminals are degenerate and bear the stigmata of degeneracy is another, and, I think, quite a false thing. I do not see why crime should necessarily be degeneracy. I can conceive a murderer being a nobler animal than a saint of the Pecksniffian sort. A murderer on a big scale, big enough to despise the fools whom he uses and sacrifices for his ambitious ends, is he not a hero? Criminals there are certainly who are defective in structure and conformation of body and mind, beings who, if not protected against themselves, will go wrong. There are criminals, again, who are more or less insane in the statutory sense, and are explained or excused by their insanities; but there are criminals also who, in other circumstances, might perhaps have been as great saints as in the changes and chances of things they became

great sinners. For assuredly the external factors of circumstances count for much in the causation of crime; time and chance happen to all men, and no criminal is really explicable except by a full and exact appreciation of his circumstances as well as his nature, and of their mutual interaction. For my part I sometimes wonder whether the new school of criminology would have found the stigmata of degeneracy present in Saul, the fiery persecutor of the early Christians, and found them gone when transformed from iniquity to holiness he became Paul, the great apostle of the Gentiles.

Has not the theory of degeneracy been abused of late? As used by Morel, the term has scientific meaning and value, but much has been done to rob it of definite meaning by stretching it out to cover all sorts and degrees of deviations from an ideal standard of feeling and thinking, deviations that range actually from wrong habits of thought and feeling to the worst idiocy, and some of them which are no more serious marks of morbid degeneracy than long legs or short legs, long noses or short noses. Moreover, as often happens with big-sounding words that have no definite meaning, but are used habitually as if they had meaning, the meaningless name has been converted into a quasi-metaphysical something, so that many persons think, when the word degeneracy has been spoken, that all has been said that need be said, though nothing actually has been said.

To me it seems that the conflict between law and medicine might soon end if words and theories were swept aside, and facts dealt with on their merits. Let the lawyers renounce unreservedly their discredited test of disabling mental disease, and submit all the facts in a particular case impartially to the jury. Medical men on their side should discard the notion of insanity in the abstract, and leave off talking of it as if it were something definite and constant, which annulled all responsibility. To place before the court as plainly as possibly all the facts of the particular form of mental derangement in the case; to explain what they mean

according to the best scientific information, and how far they affect the mind; and leave it to judge; that is our proper medical function.

The question of legal responsibility is a legal, not a medical question. As witnesses, we have nothing to do with the right or wrong of the law, though we may properly criticise it as citizens. The business of every society is to protect itself, and it has the might, which is the right, to make what laws and inflict what punishments it thinks best for its own protection—to hang for theft or flog for fornication, if it likes. Naturally each society will think its own laws and punishments the more right, other laws and punishments the less right. But be the enacted law right or wrong, the individual, in whatever social medium he is placed, must obey it or suffer the penalties of disobedience; he lives for the society, not the society for him, and, living for it, he must die for it, even though he be mad, if it thinks fit.

What, then, as the conclusion of the matter, is there left for us to do? So far back as I can remember we have been criticising the legal test of responsibility, condemning it by formal resolutions, petitioning its abandonment; yet we are still voices crying in the wilderness and doomed apparently to go on crying. However, we have made some way; we have seen it condemned by the best, magnified only by the worst, judges; and we have had an interpretation of it by the late Sir James Stephen which, if it does not radically change its meaning, makes it include practically all we ask for. If it really include not only (1) knowledge of the nature of the act, and (2) knowledge that it is wrong, but (3) control of conduct, it is a pity that all judges do not understand it properly; a pity, too, that Sir James Stephen did not take steps to have his construction of it tested, as he might have done in a way suggested by myself, that is, by expressly directing the jury according to it in a particular instance and then stating a case for the Court for Crown Cases Reserved. Perhaps, knowing the conservative tenderness of the judicial mind, he feared to jolt it but hoped to infiltrate it. One may suspect that

he himself, though direct and thorough in thought about some things, still in legal matters loved the good old way of the English mind—to keep the old names when the meaning has been taken out of them, to accept the gradual dissolution of the substance of relief so long as the label of it is left intact.

A NEUROLOGIST'S FAREWELL.

VALEDICTORY TO THE GRADUATING CLASS, BARNES MEDICAL COLLEGE.

By C. H. HUGHES, M. D.

Professor of Psychiatry and Neurology, and President of the Faculty.

BACK in the old homestead under whose kindly roof and within whose cherished walls you were sheltered from earliest childhood till the time came when you went out into the wide, wide world to begin the making of your fortune and to work your way to fame, perhaps, there sits at this very moment, doubtless, one who, slowly rocking to and fro in that cherished room which first heard the sound of your childhood's earliest prattle and witnessed your first feeble efforts at getting on in the world, is thinking, thinking, thinking only of you. Boys, it is your mother or one who sustains to you the similitude of that sacred relationship, or it may be your mother is among the saints in Heaven and that her place is filled by an older sister or some other relative, or a nearer and dearer one far than all other. Whoever it may be, it is a woman. Some woman's heart and the blessed spirit of a woman's love has followed you here to-night.

It may be the fair faced, sweet eyed girl you left behind you at the gate of her father's house with warm hand press, an affectionate kiss and a manly promise to do your duty. If so, her noble injunction, "John, no matter how much I shall want to see you, don't come back without your sheepskin," has been one of the inspirations that has brought the triumph of this hour.

When you left your home, your father, too, who himself had learned and proven the value of character to a man in working his way through the world, sterner and less tender perhaps in his manner, but no less sincerely interested in your welfare, said, "In the battle of life before you, be a man, my son." "Be a hero in the strife." Do your duty. Be true to the principles of honesty, integrity and truth. Work and you will win. He said, perhaps not in words, but in heart,

"To thine own self be true,
"And it must follow, as the night the day,
"Thou canst not then be false to any man."

And your mother, in her heart of hearts, what did she say to you, my boy? She said, or felt, as that Roman matron felt and said to her son as she bade him farewell and sent him to the front where the banners of Cæsar waved and the victorious eagles of ancient Rome were to float triumphant above the shout and din of battle and scenes of carnage, "return with your shield or on it." And so does every true modern mother say. She loves her son, but she would rather see him die in the strife than be a coward in the battle of life.

Gentlemen, you have won the fight. You may now go home with the trophies of victory. But this is but the first engagement of your campaign. You have endured its discipline and trials so far with persevering fortitude and admirable courage. You have marched into an unknown country, conquered it and made yourselves its masters. I myself have led you from the fourth ventricle, the seat of origin of so many of the cranial nerves, through the *iter a tertio ad quartum ventriculum*. You have surveyed with me the bridging commissures of the former and the valve of Vieussens that covers the latter. We have lifted up the fornix, found and removed the choroid plexus on its margin, and the *velum interpositum* beneath. We found the lyre there also, and you will find liars innumerable in your pathway in the world outside. In this vicinity underneath we found the corpora quadrigemina and the little fourth nerve, and close by laterally and a little anteriorly, the geniculate

bodies, and superimposed we found and removed the pineal gland with its sandy concretion which Descartes supposed was the seat of the soul, because, I presume, he always found grit in it, which every true soul is supposed to have, and which you must all have, just as a chicken must have "sand in its craw" to live in this life of conflict in which the fittest survives, the best and truest fighter wins, while the unfit, the weak, the craven and the cowards fail and die.

You went into the foramen of Monroe and the lateral ventricles, into the basal ganglia, (the thalamus opticus, the corpus striatum) and the internal capsule, the external capsule, the claustrum and the insula on either side nigh them. You took a last view of the caudate and lenticular nuclei, the tinea semi-circularis before the operculum and the fillet of Reil, you followed me from the cortex down the motor tract between the caudate and lenticular nuclei and optic thalamus into the crura cerebri and under and through the Pons Varolius into the cerebellum and the pyramids, saw the place of the lemniscus and back again to American soil, whence we started. You have made a neurological excursion, a campaign of conquest, into the territory of the cerebrum and have won a victory. You voyaged over the circle of Willis up into the country of the Sylvian fissure, followed the irrigating artery of the contiguous territory, the anterior and middle lobes of the cerebrum, and studied some of its diseases which science seeks to conquer.

You traced the tractus opticus from the chiasm and beyond in the retina to its lair in the quadrate tubercles geniculate bodies and the occipital lobes. You have looked with me from the mamillary eminences and between the commissure of the thalami down into the third ventricular cavernous with naked eye or in fancy wandering, and crossed laterally over ventricular territory into the "*bodfi*" route of the Hippocampi majores. You sailed "around the horn" as it were. You have explored the convolutions of the psycho-motor centers and their motor tracts, and the sensory tracts through the optic beds and into the cerebellum by means of the peduncles and searched for the foes of

health that lurk about these regions. You have stood faithfully around the demonstrator's table of our worthy colleague and your capable leader, Prof. Keiffer, and been led along arduous pathways to glorious victory by each member of the faculty and they each and all commend your industry, your courage, your fidelity, your zeal, and a body of distinguished visitors has specially commended your enthusiasm.

In the campaign, you have acquitted yourselves like true soldiers of science, and in all the other lines of duty, you have done likewise, as the review examinations on which we base the bestowal of these parchments testify. They are your trophies and our awards of merit. If you labor as diligently, as faithfully, as courageously hereafter as you have done to this hour in all the campaigns of the battle of life before you, you will be victorious. And when you sit down to take a retrospective view of the conflict and your part in it, as men are wont to do, and count up your triumphs and your failures, your weaknesses and your sins, and your strong efforts resistive of life's temptations, as all good men sometimes do, I trust that you will find that you have been faithful to the sacred trust these parchments impose upon you, that you have ever stood in all your dealings with mankind upon the high "vantage ground of truth," for no pleasure is comparable, as Bacon said, to such an attitude before the world. That you will have been virtuous, as your high and honorable calling demands, in all adversity remembering and getting the reward of the well known fact that,

"The good are better made by ill,
"As odors crushed are sweeter still,"

that you may glean from your life's trials and duties the true advantages of experience, growing wiser with years, subtler, deeper, and more logical and efficient in all that pertains to your own and your patient's welfare.

You have gone over much more cerebral territory than I have enumerated. You have traversed the *terra incognita* of the soul's dwelling place in the seven layers of the gray matter and as you studied the ganglion cells of the gray cortex and marvelled at the myriad cells for reception and

emission of cerebro-psychic impression, you have realized how wonderfully wrought is the brain of man and come to comprehend with the physician's insight, "by sight of science," how, when time, or disease, or toxic agents touch these centers of mental impression and expression, normal function fails and is perverted in this supreme mechanism of the Great Architect, just as in the lesser mechanisms of puny man's contrivance. You have seen a centre clogged by a clot of blood about and below the paracentral lobule and further down the Rolandic fissure and motion in the legs has ceased, and further down the bordering convolutions of the Rolandic fissure thus pressed upon, the hand has lost its cunning, if lower still the power of word expression and ideation has failed and if further back in the medulla the tongue has "cleaved to the roof of the mouth" and the heart and lungs have refused to do their normal duty. An aneurism, an embolus or thrombus, an extravasation or a focus or foci of softening has wrought this ruin in motor or vital centres of the brain; or the psychical centres from the same or other cause have been gravely pressed upon and the machinery of mind has stopped stock still or gone on with halting and perverted movement, with the mentality perverted and transformed, as in insanity or delirium. You have seen the effect of the unseen toxic touch of the intangible virus of a fever or a fatal drug on this wondrous cerebrum or its meninges, and finally you have seen how "the poor brain doth, by the idle comments that it makes, foretell (to you) the ending of mortality," when the disorganized blood of typhoid or typhus carries poison in lieu of nutrition to the ganglion cells of the gray cortex whose life in the organism is the true physiological blood thereof.

All this and much more have you noted with me during the course which ends to-night. You have gone with me down the motor columns of the spinal cord, followed the direct and the pyramidal tracts and up the posterior and the lateral columns and interior peduncles noting their peculiar diseases revealing differing symptoms according to locality, as individuals do speech, according to the country of their birth and residence.

You have noted here especially the great reflex centers, particularly in the lumbo-sacral spine, the cilio-spinal centres of the cervical area and the vital reflex centers of the medulla and many¹ the nerve origins of the medulla and pons regions. You have studied their significance in health and disease, appreciated their signal aid in diagnosis and wondered again at the intricate mechanism and nice adjustment to end, in the machinery of man, comparing it with the machinery of man's contrivance, you have thought with Alexander Pope how,—

In human purpose, though labored on with pain,
A thousand movements scarce one purpose gain,
In God's, one single can its end produce
And yet serve second to some other use.

Such is the mechanism of the cerebro-spinal axis, to say nothing of its attendant system of peripheral nerves in the sensory and motor and sympathetic systems with the wonderful ganglionic centres of the latter. But this neural journey into the vast territory of the neurones, neurils, cells and proliferations must end, like our most pleasant companionship of the past year. We have together fought away many obstacles and blazed many pathways in companionship with each other. We have marched through neurologia and neuropathia, psychiatria and psychopathia, to the open neurologic and neuriatric sea.

Besides all this you have looked with microscopic vision into the infinitely minute cosmos of the cerebral hemispheres, mesocephalon, etc., and spinal cord of man, and seen the potentiality of ultimate cells and the wondrous conducting power of microscopic strands of nerve fibre. You have with mental vision gone further, "where no eye can see, no glass can reach." You have heard this faculty "expatiate free o'er all this scene of man; a mighty maze, though not without a plan," as your progressing study proved.

In the great mechanisms of mind, sensation, perception, reflection, emotion, and the motor, nutritional and metabolic movements in the domain of the cerebro-spinal with its attached trophic and sympathetic systems, you have found, indeed, a "vast chain of being which from God began" and discovered

how "all are but parts of one stupendous whole," like the great universe to which Pope referred, whose life the blood is and the nerves the soul, as we know by sight of physiological and chemico-biological science, and the Röntgen rays of advancing science are constantly clearing our vision into the depth of things pertaining to medicine.

Adendum.—This impromptu address is published as it was delivered without such emendatory elaboration as might have made it more exact but less suited to enlist the simultaneous interest of a body of students and a non-medical audience.

SELECTIONS.

NEUROTHERAPY.

HYSERIA DUE TO ADHERENT CLITORIS.—Dr. G. G. Gordon, of Wayne Co., Mich., reports (*The Medical Age*) a case of this kind. The hysteria failed to recur after the adhesions of the clitoris to the lessor labia were loosened.

DR. A. B. CLEMENTS, Washington, D. C., after continual trial, expresses his confidence in PEACOCK'S BROMIDES in nervous disorders where the compounds of bromine are indicated, and thinks they have decided superiority over any of the bromides singly administered.

Peacock's formula is reliable and we are gratified to see this worthy St. Louis firm appreciated abroad.

WENDELL REBER, A. M., M. D., Pottsville, Pa. in the *Buffalo Medical Journal*, lauds antikamnia for frontal, temporal, vertical or occipital neuralgia and for the terrific fronto-parietal neuralgia of glaucoma, or in rheumatic or post-operative iritis. He has seen the most benign effects follow the hourly administration of ten grains of antikamnia until the pain is relieved. It will seldom be necessary to exceed sixty grains of the drug.

A NON-TOXIC PREPARATION OF CANNABIS INDICA. A new watery fluid extract of cannabis indica termed *extractum cannabis indicæ agnosum fluidum* is now being used (*Therapeutische Wochenschrift*) which, according to R. Cowan Lees, possesses all the beneficial properties of the plant and does not produce the state of intoxication, bordering on poisoning, which frequently follows the use of even medium doses of the alcoholic preparations. It has no effect on the secretion of bronchial mucus, and is often more efficient than opium in bronchial affections. It has an anodyne and hypnotic effect in pulmonary diseases. Lees observed the

best results from its use in tuberculous disease of the lungs, in which it alleviates the cough and exerts the stimulating and cheering effects of cannabis indica. It is valuable in digestive disturbances with constipation and as a soporific in the diseases of children. The medium adult dose is from thirty to sixty grains; for a child less than a year old, from fifteen to thirty one-hundredths of a grain for each month of age; for older children, from a grain and a half to three grains for each year of age.

PSYCHOTHERAPY.

GRIEF FROM A MEDICAL STANDPOINT.—The nervous system requires complete rest after blows caused by sorrow. Recent medical observations show that the physical results of depressing emotions are similar to those caused by bodily accidents, fatigue, chill, partial starvation, and loss of blood. Birds, moles, and dogs, which apparently died in consequence of capture, and from conditions that correspond in human beings to acute nostalgia and "broken heart," were examined after death as to the condition of their internal organs, and it was found that the nutrition of the tissues has been interfered with, and the substance proper of various vital organs had undergone the same kind of degeneration as that brought about by phosphorus or the germs of infectious disease. The poison of grief is more than a man. To urge work, study, travel, the vain search for amusements, is both useless and dangerous. For a time the whole organism is overthrown, and temporary seclusion is imperative for proper readjustment. Grief can not be ignored, neither can it be cheered up. It must be accepted and allowed to wear itself away. Readjustment comes slowly. Sorrow, grief, and all great misfortunes should be regarded as conditions similar to acute infectious disease, which they resemble in result; and, later, as convalescence from such disease. Seclusion, rest, sleep, appropriate food, fresh air, sunshine, interests that tax neither mind nor body, these are requirements in this class of illness.—*Charlotte Medical Journal.*

PSYCHIATRY.

APOCODEINE HYDROCHLORATE IN MANIA.—Toy (Semaine Medicale, No. 15, 1895) has employed apocodeine as a sedative in forty-eight cases of mania, in doses of one-third to one grain. In every case the drug diminished the excitement and frequently produced sleep lasting several hours. It has never caused vomiting. It increases peristalsis, and commonly acts as a mild cathartic.

SEXUAL CRIMES BY INEBRIATES.—Dr. T. D. Crothers, in an article on this subject (*Medical and Surgical Reporter*), reports a number of sexual crimes committed by inebriates, chronic and periodic, under the influence of alcohol, all of which he attributes to insanity. He concludes as follows:

1. The use of alcohol on the brain centers, by paralyzing and disturbing their harmonious action, is most likely to be followed by manias and delusions.
2. The several nerve centers may suffer by irritation and exaltation, or depression and paralysis.
3. In the former case, they dominate all other centers, and either act explosively or by continuous irritation and demand for relief.
4. The facts of using spirits, coupled with wild sexual conduct, is strong evidence of mental weakness and disease.
5. Sexual crime in an inebriate is always some form of insanity. The want of control, and the absence of rational judgement of the effect of the act, and the consequence from it, are usually very clear in every case.
6. Reasoning and cunning to conceal the crime never implies sanity by itself, or preparation to commit the crime; both are the workings of an abnormal mind, dominated by a morbid impulse.
7. Acts of any kind showing these impulses, or in a case of sexual mania, are open to question, unless they are rational and along lines of reasonable motive and conduct.
8. The explosive character of sexual crime, at its final culmination after a series of acts that lead up to it, should always receive the closest medical study.

9. Sexual crime and questions of legal dispute among ineptuates should receive careful medical study before they come into court, and the facts of the crime and criminal be brought out clearly before any legal decision of the final disposition of the case be made.

PERIODIC PARANOIA.—Dr. Ushenko, of Russia, reported (*Archives Psychiatry, Neurology, and Legal Medicine*) a case of Periodic Paranoia (the fourth one of this form of paranoia so far reported) in a man of 35, married, with the following history; father was a crank and alcoholic; one brother a crank and women-hater, with only four fingers on one hand; another brother has a curvature of the spinal column. The patient is a pronounced masturbator. First symptoms of mental disease were noticed after patient had suffered an injury to the head, followed by erysipelas, though it is probable the disease began earlier. It developed gradually, patient being at first unsociable and distrustful, afterward becoming suspicious seeing in everything sinister intentions toward himself. Suspicions gradually developed into typical delusions of persecution, to which were added later delusions of greatness. Ideas of persecution were more or less based upon gustatory, visual, and occasionally aural hallucinations. These symptoms, characteristic of paranoia (primäre Verrücktheit, délire systematise, systematized delusional insanity), alternated with periods of mental lucidity. On admission to the Charkow Asylum, patient found to be cognizant of surroundings, except that he pretends that the actual designation of the asylum is to prepare its inhabitants, which, he says, are not patients, for prominent positions. A certain patient knows all his thoughts, by influencing him by means of electricity and magnetism. He is so absorbed in his own thoughts that the most common things escape his notice, while meaningless things excite his attention to a high degree. He anxiously watches the above patient rub his hands, which rubbing, he imagines, is the source of the power which magnetizes him. He believes himself capable of doing great deeds, making great reforms, becoming emperor. He is subject to visual illusions, seeing peculiar and not existing expressions of those about him. At

times he tastes poison in his food. Once he heard somebody call, "Anti-Christ;" at another time, "What a form?" When patient was admitted to asylum he was in the midst of an attack, which had begun shortly before, and which lasted six days. Then he had an interval of perfect lucidity of about a week, which was followed by a second attack of about two weeks duration. The following are the main characteristics of the case: (1) The alternation of the attacks with intervals of lucidity. (2) The similarity of successive attacks. (3) The short duration of the premonitory period to the attacks. (4) The perfect change in the personality at the time of the disease. (5) The full insight into his disease during lucid intervals. The author is of the opinion that periodic paranoia belongs to the psychoses of the degenerated, a characteristic of these psychoses being, that no matter how frequently they may occur in an individual, they seldom lead to dementia.

POPULAR LUNACY.—Under this caption the *Journal of the American Medical Association* makes the following very just comments on current folly on matters pertaining to questions of insanity. The people are not overly wise on this subject.

"In one of EDGAR A. POE'S stories there is given an account of a visit to a lunatic asylum, where the patients had turned the tables on their keepers and were running the establishment according to their own mentally vagarious notions. One of them, an exceedingly conscientious young female, had gotten the idea that the wearing of clothing was highly immodest and immoral and proposed therefore to return to her birthday costume or that originally the fashion in Eden. It was, however, considered even by her fellow lunatics an evidence of insanity and she was restrained from imitating too closely her mother Eve in her state of primal innocence.

"A case that has recently created quite a stir in Great Britain suggests POE'S story in one or two of its details. A young woman, highly educated and of good social position, and of good prior reputation, suddenly asserted her

conviction that marriage is immoral and her intention to at once go and live in concubinage with a workingman. She was declared insane by an eminent authority, but from here on, the case differs from the story; the public was not as discerning or as decent as the lunatics; the socialists, MR. JOHN BURNS at their head, took up her defense, and the Commissioners in Lunacy, presumably at their instance, examined her and discharged her from custody, it is said, as not presenting any definite type of insanity. The examination was brief, only one hour is said to have been consumed, and the suspicion that it was imperfect and the resulting action stimulated by the clamor of the lady's socialist supporters is rather justified than otherwise.

"Whatever may have been the actual condition of the woman the moral of the decision is this: Insanity must be of a definite type, no new forms are to be discovered, our knowledge of it is exhaustive. This is an opinion that, however satisfactory it may be to the legal mind, can have no medical standing whatever, its mere statement is a *reductio ad absurdum* in itself. Again it is a claim that two officials can in an hour obtain a better insight into a case than an expert and a family physician with full knowledge and continuous observation. The only alternative to these suppositions is the assumption that the commissioners acted under the influence of a popular prejudice and "were guilty of releasing a probable lunatic to disgrace herself and her family without complete and full investigation or examination. The case at best leads to rather unsatisfactory conclusions as to the absolute perfection of the English lunacy methods.

"There is still another point which it strongly emphasizes, namely, that no matter how absurd or outrageous an individual may act, the popular prejudice against the restriction of his or her liberty on the ground of insanity can be made effective on almost any pretext. The public *en masse* is not a rational being under such circumstances and mob law and its equivalents are as ready to release inconvenient lunatics at some times as they are to hang them at others. There is no other subject in regard to

which public opinion and the lay press takes more opposed and irrational views, than that of insanity, and there is hardly another subject on which the judge-made law is more inconsistent. Whether there will ever be any perfect popular enlightenment on this subject is perhaps a question, it is too much to expect even if individuals are well informed, that acting collectively they will ever be altogether rational in their behavior, and insanity is certainly one of the subjects upon which the *vox populi* becomes too often the *vox diaboli* more than anything else."

NEURO-SURGERY.

THE SURGICAL TREATMENT OF IDIOCY.—The March number of *The Philanthropic Index and Review*, a periodical published in the interests of feeble-minded children by Dr. C. F. Wilbur, proprietor of the Wilbur Home, contains an interesting resumé of the literature of this subject by Dr. G. T. Shuttleworth, in which Fuller, of Montreal (now of Grand Rapids, Mich.) is justly given the credit of having first performed Craniectomy for idiocy (and with good results).

Dr. Shuttleworth concludes as follows:

I. That craniectomy is but rarely, if ever, of permanent benefit in cases of ordinary congenital microcephalus, in which the original defect is in the brain, not in the bone; but that it may possibly do good by relieving pressure symptoms and favoring brain development where premature synostosis is the result of osseous hypertrophy from constitutional causes. The diagnosis of appropriate cases, is, however, beset with difficulties.

II. In recent traumatic cases, where epileptic or irritative symptoms arise from pressure, cranial operations are clearly indicated, as, also, they are in cases of mental impairment with hemiplegia, or athetosis occurring from intra-cranial hemorrhage during parturition—the “birth-palsies” of Dr. Gowers. The risk, however, of the cerebral defect arising from porencephalus, and not from compression by clot or false membrane, must be borne in mind.

III. In cases of mental impairment from effusion in hydrocephalus and in tubular meningitis, tapping may be resorted to with advantage. In hypertrophy of the brain, also, trephining and section of dura mater may be beneficial in relieving undue pressure.

IV. One case referred to (Mr. Anderson's) gives expectation of, at any rate, temporary benefit by similar proceedings in cases of imbecility from inherited syphilis.

Whether in the future it may be found possible to release convolutions bound down by inflammatory products and thickened membranes so that subsequent atrophy and lack of cerebral development may be modified, is a question of surgical skill and technique on which Dr. S. does not enter.

SPINAL PUNCTURE.—Furbringer (*Deut. med. Woch.*, November 7, 1895) refers to a few cases in which no fluid could be obtained by him, although there was every reason to think that the needle had entered the dural sac. In one case the puncture was made as many as fourteen times. He relates the following case in an infant aged five and a half months, which was admitted with fever, stupor, marked opisthotonus, and bulging fontanelle. Only a few drops of fluid could be obtained by spinal puncture, although, contrary to his usual practice, he employed aspiration. At the necropsy, in addition to distention of the cerebral ventricles, the pia mater at the base of the brain was converted into a dirty yellowish white mass with numerous tubercles in it. The same condition was noted in the spinal cord. The dural sac was distended, not by fluid, but by this edematous spongy material. There was evidence that the needle had entered the dural sac, but had not injured the cauda equina. The negative result was due to the absence of fluid. Among the author's three or four negative cases there was one case of uremia without necropsy. Furbringer has obtained by spinal puncture 50 and 90 c. cm. of fluid respectively from two cases of uremia, but in one case, where only a few drops could be obtained, there was no fluid after death.

THE VALUE OF OPERATIVE INTERFERENCE IN EPILEPSY.—Dr. Edwin Gaillard Mason (*Medical News*), in an article on this subject based on an analysis of seventy cases of Epilepsy taken from contemporaneous literature, concludes that, in the light of our present experience, the value of operative measures may be thus summed up:—

1. A certain small percentage of the cases will be cured.
 2. A certain larger percentage will be improved.
 3. An even larger percentage still will not be improved at all.
 4. An operation upon almost any case will produce a temporary cessation of fits.
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NEURO-PATHOLOGY.

PATHOLOGY OF IDIOCY.—Dr. F. Savary Pearce, of Philadelphia, in an article on Mental Enfeeblement and Idiocy (*International Medical Magazine*), states that in local or general atrophy of the brain, the nerve cells are round instead of stellate, and not branched. Compared with the neuroglia or connective tissue elements, few nerve fibres exist in the white matter. Atrophy of the anterior cornua was found, but no degeneration of the white columns. General or partial hypertrophy is seldom seen and must be distinguished from hydrocephalus, which, according to Rokitansky, breaks down into a granular looking debris. Both local and general softening occurs, due to insufficient blood-supply, and caused by meningitis, tumors, thrombi of the middle cerebral arteries or of the superior longitudinal sinus.

Remnants of nerve fibres, granular cells, debris and blood-corpuscles may be seen by the microscope. Disseminated sclerosis is found; the medullary substance, as compared with the gray matter, is usually increased. Hydrocephalus sometimes occurs in idiots, in which the extremities are frequently paralyzed from excessive cerebral pressure, Porencephalus occurs from diffuse hemorrhage *in utero*, or is the result of trauma later in life. Tuberculous or gliomatous tumors may occur. Asymmetry of head and

convolutions occurs. Simplicity of the convolutions is seen, and is evidence of reversion to our arboreal ancestry. Chronic meningitis occurs, and death is often due to acute, simple or tubercular, meningitis. Atrophy, tuberculous tumors and cysts are the most frequent lesions of the cerebellum. Descending degenerations in the spinal cord are found when cerebral palsies coexist with imbecility. High palatal arches, badly set teeth and club foot are common physical signs of degeneracy. With the exception of the axillary pole, the cell processes are small and stunted. The nucleus stains deeply, the protoplasm less so. In frozen or hardened sections of the cortex, not more than five layers may be detected. The third layer is most affected.

CAUSE OF ROMBERG'S SYMPTOM.—Bonnier (*Medical Week*) believes Romberg's sign to be invariably characteristic of a defect in, or irritation of the ampullary apparatus of the labyrinthic, peripheral or central nerves, which accounts for its frequent occurrence in tabes dorsalis.

CEREBRAL UREMIA.—Rendu (*Jour. de Med. et de Chir. prat.*) believes two factors causative of cerebral uremia, the one a toxic element due to faulty elimination of the debris of the organism by the kidneys, the other, a mechanical one, cerebral edema, which localized in the motor zones may give rise to convulsions, either general or partial. Sometimes the uremia assumes an apoplectic form, in others it is hemiplegic, both due to cerebral edema. The author thinks hemiplegia attributed to hemorrhage or softening is often due to uremia: Post-mortem examinations of cases of hemiplegia, often disclose no lesion, due probably to the disappearance of the area of edema at the moment of death.

CLINICAL NEUROLOGY.

THE NEUROTIC ORIGIN OF PULMONARY CONSUMPTION.—In a very interesting address to the graduating class of Dartmouth Medical college, published in the *Transactions of the New Hampshire Medical Society* for 1895, Dr. A. Noel Smith, of Dover, among other things, points out the

important fact that the instruction which young graduates receive at medical colleges is but a part of the broader education which they will receive afterward, and reminds them that they must go out into the world as independent thinkers and with a sufficient mental equipment to decide intelligently between the various conflicting theories which crowd upon them. As an instance of such disagreement he refers to the different theories which are held in regard to the origin of pulmonary consumption. On this question, he says, by far the majority will be arrayed on the side of the bacteriologist, who latterly has been accounting for all or nearly all the diseased conditions of the human economy. A trifle more conservative element would say that in general the question of the origin of phthisis resolved itself into (1) progressive malnutrition, (2) some of the causes of inflammation, and (3) the introduction of the tubercle bacillus. But, as the tubercle bacillus is the only thing which stamps the disease as a tuberculous process, it must be regarded as an essential ætiological factor, and without it there can be no tuberculosis.

Another section of scientific workers would answer that the bacillus was not the sole cause of phthisis, but only a part of the life-history of certain microscopic plants in the system; and still another class of workers would contend for a purely neurotic origin of phthisis.

After referring to the view of the Cutters, of New York, which holds that this disease is caused by the introduction of the yeast plant into the blood through the small intestines, he says that the theory that phthisis is a neurosis is ably championed by Dr. Thomas J. Mays, of Philadelphia. The treatise on *Pulmonary Consumption, a Nervous Disease*, and supplementary writings, are ingenious defenses of well-wrought theory. His study of this theory has extended over eight years, and he believes that it better accounts for the existence of phthisis than anything else, that the theory is in perfect harmony with the therapeutic indications of the disease, and that there is no specific treatment and never will be except that which strives to support the nervous system and the constitution of the patient.

"In a masterly and convincing manner, he originates the disease in the vagus nerve, and establishes by authorities cited, and many tabulated cases, the relation existing between consumption, syphilis, epilepsy, diabetes, leprosy, insanity, hysteria, neuralgia, and other nervous affections. He does not hesitate to affirm that the bacillus has never been proved to give rise to phthisis as it is found in the human subject. It is admitted that tuberculosis may be produced by inoculation in the lower animals, but denied that this is any proof of the same thing taking place when the disease is produced in a natural way. 'Nature,' he says, 'does not go around and inject the bacilli into people with a syringe.' The artificial and natural production of consumption are different things entirely. The fact is cited that the great majority of cases of phthisis begin as catarrhal pneumonia, and not as a tuberculosis.

"Dr. Mays does not believe that the bacillus causes phthisis by inhalation or ingestion, although he admits that certain cases of acute miliary tuberculosis arise through infection, not from outside, but a true auto-infection. Whenever caseation occurs in the body as a result of inflammation, a virus may be produced which is capable of giving rise to true tubercle. He goes on to say that this virus may be, and he thinks probably is, the bacillus. This auto-infection occurs in a limited degree around lung cavities which result from caseous degeneration.

"As Dr. Mays believes that disease of the pneumogastric nerves is the fundamental lesion in phthisis, I took the liberty to ask him whether the presence of the *bacillus tuberculosis* in the system might not be responsible for such lesion. This he can not for a moment entertain, and says: 'Given a cause which will produce degeneration in the vagi, and *phthisis* may occur, but *lung* disease in *some* form will *always* occur. This has been proved beyond a doubt. The bacilli are a mere produce. Why, if the bacilli are the cause of phthisis, should they seek only those who have a broke-down nervous system and infect them? Why should they select the insane and idiotic, who nearly all die of phthisis? Why should they pick out the hysterical, the

epileptic, the asthmatic, the diabetic, the neurotic, the alcoholic, the syphilitic, lepers, workers in mercury and lead, and leave those entirely unharmed who are constantly exposed to their presence?" "

Thus the primary cause of the degeneration of the vagi he would make due to anything producing a depressing effect through the general system, such as grief, worry, mental overwork, disappointment, the diseases mentioned above, and whatever might act directly through the nerves themselves, such as the pressure of an aneurysm or of cervical or bronchial glands, weakness caused in children by diphtheria or scarlatina, while in after years general nervous depression might be superadded.

In short, says Dr. Smith, the advocates of this neurotic theory maintain that all diseases have an attendant micro-organism; that the natural is very different from the artificial production of phthisis; that inoculability is no proof of practical contagiousness; that consumption is only contagious on suspicion; that the victims of phthisis bear no correspondence to the numbers exposed to the bacilli, that all treatment founded on the bacillus theory has failed; that catarrhal phthisis can be produced in animals by section of the pneumogastric; that this nerve is primarily diseased in consumption; and that the neurotic theory shows cause and effect in a more rational way than any other theory does.

Thus, he adds, we have to-day what might be styled the orthodox bacteriologist on the one hand, and the, at present, heterodox opposition on the other hand, which may possibly in turn become orthodox. Not only do we have Mays, the Cutters, and others at the head of formulated theories, but clinical experiences multiply doubters.—*N. Y. Medical Journal.*

NITRO-GLYCERIN IN THE TREATMENT OF SCIATICA.
—Dr. William C. Krauss of Buffalo, N. Y., read a paper on this subject before the Medical Society of the State of New York, recently held at Albany.

Although skeptical in regard to new measures and remedies, in the face of the abundance of measures recom-

mended, such as electricity, heat, cold, acupuncture, nerve stretching, hypodermic injections, splints, extension, rest, cauterization, not to speak of the innumerable medicinal agents, he, however, tried Nitro-Glycerin and reported seven cases, all of which were speedily cured or greatly benefited.

The administration of Nitro-Glycerin should be as quickly as possible after the onset of the pain, whether it be neuritic or neuralgic in character; beginning with one minim of the one per cent. alcoholic solution and increasing until the peculiar physiological effects of the drug are obtained. Seven cases were reported and are here briefly summarized:

CASE I. Male; age 50—60; has been a frequent sufferer of rheumatism and sciatica for years. On Thanksgiving day, 1895, he was taken with an acute attack of sciatica. Various measures were tried without any effect and the case was turned over to the writer. Nitro-Glycerin in 1 minim doses of the one per cent. solution, three times daily, was prescribed and in three days the severe pain had disappeared, and after ten days the patient was freed from all sciatic pain.

CASES II and III were that of husband and wife, both suffering with acute sciatica. The husband, however, had been a rheumatic for some years and had also had gout. In two weeks time under the Nitro-Glycerin treatment both were relieved of the sciatica.

CASE IV, that of a stenographer, used to sitting ten hours daily on a hard-bottom chair, began to complain of symptoms denoting a neuritic affection of both sciatic nerves. Nitro-Glycerin and rest thoroughly dispelled these symptoms and in a short time she was again able to resume her customary work.

CASES V, VI, and VII, were hospital cases, and received marked benefit from this form of treatment.

The disagreeable effects of the Nitro-Glycerin, as congestive headaches, flushing, etc., may be relieved by the bromides.

The author does not claim that it will cure every case of sciatica, but if it relieves fifty per cent., it will be doing what no other single drug has heretofore done.

THE RELATION BETWEEN TABES, GENERAL PARESIS, AND SPINAL SYPHILIS.—Nageotte (*Archives de Neurologie*) has studied the pathology of a number of cases of general

paresis, tabes, and spinal syphilis, with reference to the character of the lesions. He finds certain inflammatory changes of a chronic character in all cases, and the nature of the process the same in all three diseases, and he consequently thinks the three separate clinical pictures are merely due to the preponderance of the inflammatory process in certain locations. He concludes as follows: 1. In tabes, general paresis, and syphilitic myelitis, there exists a diffuse inflammatory process involving the whole cord. This lesion, on account of the tissues it seems to attack at first, should be called vascular or connective. It consists of a round-cell infiltration invading the pia mater, the arachnoid, and the capillaries of the spinal cord, and it attacks the superficial veins with great avidity. The essential elements of the cord undergo secondary alterations. The lesion appears to be constant if suitable elective nuclear dyes are employed for its detection. 2. The lesions of the central cortex—causes of general paresis; those of the radicular nerves—causes of tabes; and the localized foci of syphilitic myelitis are only exaggerations of this diffuse lesion in certain points of election, being due to factors still imperfectly understood. 3. The process presents a characteristic aspect which seems to make it a distinct entity, although we cannot assert that it always arises from the same causes. From a clinical standpoint, however, it is quite certain that a vast majority of cases have a direct connection with syphilis.

PARANOIA, WITH ALCOHOLISM.—Dr. Eastman (*Am. Jour. Ins.*,) gives the history of a case of chronic delusional insanity, accompanied by alcoholism, and concludes as follows:

1. That acute alcoholism may be engrafted upon chronic delusional insanity, and the totality of symptoms may be mistaken for simple acute alcoholism.
2. In such a case the cure of the acute alcoholism may lessen the intensity of the delusional insanity, but does not effect its cure.
3. Such a patient may be sagacious enough to take

advantage of the physician's diagnosis and simulate entire recovery by concealing his chronic delusions.

4. The final outcome of this case shows the fundamental insanity to have been dependent upon chronic, progressive, incurable brain impairment; itself probably due to long-continued inebriety.

MULTIPLE NEURITIS AND LANDRY'S PARALYSIS.—Dr. George L. Walton, in an article on Multiple Neuritis the Essential Element in Landry's Paralysis (Boston Medical and Surgical Journal), attempts to demonstrate with the aid of the statistics of 121 recorded cases and the report of a case from his own practice, the practical clinical identity of Landry's paralysis with a well-recognized form of toxic neuritis, as advocated by James Ross in 1889, and believes Landry's Paralysis should be classified under Neuritis, rather than under diseases of the cord.

Dr. Walton describes Landry's paralysis as an acute toxic disease, characterized by rapid loss of power in the lower extremities, trunk, and to a less degree in the upper extremities, affecting also the vagus and phrenic, sometimes other cranial, nerves. The affected muscles are lax. Pain, paresthesia, anesthesia, and tenderness are generally present in varying degrees, though in some cases sensory disturbances are wanting. Death follows in more than half (64 per cent.) of the cases. Recovery when present is very slow. The reflexes, deep and superficial, are lost at an early stage; wasting and reaction of degeneration appear if the patient survives. The process is a toxic affection of the peripheral nerves (neuritis), cord and brain, the former being the essential and persistent lesion. These introductory observations, he says, will enable us to appreciate, on the one hand, how closely his case conforms in its essential characteristics to the type of so-called Landry's Paralysis, and, on the other, how appropriately it falls under the head of the now well-recognized toxic multiple neuritis.

MALARIAL NEURASTHENIA.—Dr. Triantaphyllides of Batoum, says (Med. Week) malarial neurasthenia is ob-

served in patients presenting no sign of chronic malaria, such as enlargement of the spleen or liver, anaemia, fever, etc. It is important to know that such a condition may exist, as it differs from ordinary neurasthenia in that it readily yields to suitable treatment, in which quinine plays the most prominent part. During the past five years he has seen about fifty cases of this affection, the malarial origin of which was proved by the presence in the blood of the characteristic haematozoa, and by the beneficial effect of quinine. The slightest form of neurasthenia due to malaria consists in a state of apathy or physical discomfort. In a higher degree of development, malarial neurasthenia presents almost all the psychical, amyosthenic, vasomotor and other disturbances of ordinary neurasthenia. Disturbed sleep, digestive troubles and general headache are less constant in malarial neurasthenia than in Beard's disease. The area of spinal hyperesthesia is also less marked and not always present. The umbilical area is rarely absent, so that, in the majority of patients suffering from malarial neurasthenia, a sharp pain may be determined by compressing the umbilical region on the left side. Malarial neurasthenia rarely sets in suddenly, usually being preceded by vague neuropathic disturbances, and developing by paroxysms. After a number of these paroxysms have occurred, the neurasthenic condition becomes permanent. Prompt recovery is usually obtained in cases of recent date by means of from one to four hypodermic injections of neutral hydrochloride of quinine, the dose of each injection being from 60 centigrams (9 grains) to 1 gram (15 grains). In cases of relapse a larger number of quinine injections are required. In cases of old standing, usually more or less rebellious to preparations of quinine, Dr. Triantaphyllides has obtained good results from the administration of sulphite of cinchonine either by the mouth or subcutaneously, or sulphate of cinchonidine, assisted by certain accessory measures, such as wetpacking, suspension, and seabathing.

A CLINICAL STUDY OF ANTIKAMNIA. Samuel Wolfe, A. M., M. D. (*New York Medical Record*), Physician to

the Philadelphia Hospital and Neurologist to the Samaritan Hospital, Philadelphia, summarizes as follows:—

“I feel justified from my experience, to formulate the following conclusions:

“That antikamnia is valuable for reducing temperature in febrile complaints.

“That it is of service in many forms of pain connected with febrile diseases.

“That it has a field of use in rheumatic and gouty affections.

“That in neuralgic and myalgic pains, it is not only palliative, but along with other measures, assists in ultimate cures.

“That in neurasthenia, hysteria and migraine, it is a valuable adjuvant to the other recognized therapeutic measures.

“That in organic nervous diseases, it has a field of application.

“That it is the least depressing of all the drugs that can exercise so extensive a control of pain, and also least disturbing to the digestive and other organic functions.” He further states:

“The scientific physician prefers always to treat a cause or condition, rather than a mere symptom. If he can remove pain, by abolishing its cause, he will do so, rather than to blunt the sensory structures so that the pain is not felt. The demand for relief from mere symptoms, however, frequently becomes imperative, and this is especially the case when pain is present.”

A BLOOD TEST FOR DIABETES.—Dr. L. Bremer, of St. Louis, declared his ability to determine diabetes by Microscopic examination of the blood and details the technique of his procedure in the *New York Medical Journal*.

“He claims” (we quote for brevity from the *Maryland Medical Journal*) “that by a judicious mixture of eosin and methylene blue to which certain other procedures are added, a drop of blood, which, from the author’s statement, must be drawn from the fourth finger of the right hand, is

spread on a cover glass and the diagnosis can be quickly made.

"He has seen what he calls 'sugar liners' and 'border liners,' by which he means cases which stray over into the border of diabetes and back again before an urinary examination can detect the departure. The examination of the blood can usually fix the diagnosis long before it can be made by testing the urine. Errors may be made unless the person carrying out the test is very skillful.

"The chief result of these examinations shows that the test by the blood can be made with greater certainty and more quickly than by the urine; there is a substance in the blood of diabetics which gives a peculiar reaction with the staining fluids mentioned and no other condition of the blood causes this. The substance in the blood is hardly sugar, but some product of disorganization.

"This work of Dr. Bremer deserves further study and corroboration by workers well known in the field of microscopy."

Dr. Bremer also claims to diagnosticate neurasthenia by similar examinations.

We should like to see a list of blood examinations, say one thousand, with conjectural diagnoses from the blood only by microscopist, and subsequent diagnoses by urinary analyses as to diabetes, Morbus Brightii and Neurasthenia. Who will undertake the Herculean labor for the benefit of Clinical Medicine?

LIPOMATOSIS UNIVERSALIS, WITH MYXOEDEMA.—Dr. S. Henry Dessau (*The Clinical Recorder*) reports the case of a boy, twelve years of age, whose height was four feet one and a half inches, and weight one hundred and fifty pounds, presenting the following symptoms:—The deposit of fat, firm; expressionless face, head small; hair thick and not particularly dry; scalp full of dandruff; eyes small with slight amount of both lateral and horizontal nystagmus; vision poor; walk uncertain and reeling in character; movements quick; no ataxic symptoms in walking; memory good, though he is of low grade of intellect; cowardly;

voice loud and speech quick, though thick in the pronunciation of certain consonants; lips not thick, and of a slight vermillion hue; nose not broad; complexion not pale—considerable color of cheeks; capillary circulation responds to slightest irritant; skin smooth and soft; great tendency to sweating; sexual organs small; marked, though not large, tremor of the arms and head on attempting muscular movement; twitching of facial muscles; appetite moderate; great thirst; urine very free, pale and containing small percentage of albumin. He becomes short of breath on slight exertion; heart weak; pulse, 90, and small; respiration, 34.

Patient examined by numerous physicians and various opinions expressed.

Two years ago was given Carey's Thyroid extract and the English dried preparation; delirium was produced, but no benefit followed. More recently he was treated with Burrows, Welcome & Co's. Thyroid Tabloids for a month without result. Dr. Dessau is now giving 1½ grains of Parke, Davis & Co's. dried preparation, four times a day and patient lost five pounds in two weeks.

The further progress of the case under this treatment, the author thinks, is fraught with interest as it does not present a pure illustration of myxoedema—the tremor, nystagmus and thick speech being suggestive of pseudomultiple sclerosis, occurring in a corpulent subject, the result of general lipomatosis.

CLINICAL PSYCHIATRY.

HYPNOTIC ACTION OF SCOPOLAMINE.—M. Olderoggue and M. Jurman, two Russian physicians, made a series of experiments with the hydrobromide of scopolamine (*Semaine Medicale*) and found that the drug possessed true value as a hypnotic in the treatment of the insane.

The dose, varying from 0.003 to 0.015 of a grain, administered hypodermically, induced sleep in the majority of patients, which lasted from three to ten hours. On

awakening, the patients appeared much calmer than before the administration of the drug. This effect was especially pronounced in maniacs, but not so marked in acute lypemania. Its hypnotic action was also manifest in chronic insanity.

DIAGNOSIS IN MENTAL DISEASES.—Based on the foundation of practical experience with special interest in mental disease, the writer is inclined to believe that physicians having no clinical training in mental disease can not properly ascribe the importance or significance of certain symptoms. Not that insanity cannot be diagnosed in well defined cases, but that discrimination, that power to weigh well certain symptoms,—get the natural history as it were,—of the disease, is what is lacking in the book-made alienist. In surgery a mere tyro can detect the presence of a tumor, but to give its significance, its proper appreciation and classification requires the experienced man; so too, in mental disease. Complexity necessarily exists in such diseases, because of the very varied phenomena which makes up mind. In its diseased state, therefore, to properly understand it, to determine the value and truthfulness of certain symptoms, requires a residence among the insane. Here the daily contact with cases, at all hours and under a variety of conditions, enables the physician to see plainly the picture in all details, then and only then are the real phases of disease appreciated.

Such a training is essential to become an alienist, just as is a hospital experience necessary to give skill, technique and powers of diagnosis to the surgeon. That delicate power of diagnosis, of handling the scalpel and of meeting emergencies as they arise, comes to the surgeon by patient and trying experiences. That power of appreciating mental symptoms, of handling the real physical significance of a mental shadow, and the powers of discrimination are acquired by the alienist only by patient and trying experiences.

Dogmatic assertions, based only on text-book knowledge, carry but little weight in the actual experiences of life. It is the ability to see, discriminate, appreciate and foretell which comes from clinical study that, after all, gives satisfaction.—F. P. NORBURY, *in Medical Fortnightly*.

BIERNAKI'S ULNAR ANALGESIA SIGN IN THE INSANE.

—Goebel, in *Neurolog. Centralblt*, after referring to Cramer's conclusion that with few exceptions among the insane this new sign is limited to general paralysis and describing his mode of testing by pressure on the nerve in the intercondyloid notch at the elbow and noting effects as to pain or paræsthesia in the nerve distribution, says he finds a difference between men and women; 87 per cent. of the male cases of general paresis examined by him presented a double sided ulnar analgesia. The symptom is not at all constant in females, and so with them cannot be utilized as a diagnostic aid. But among men suspected of general paresis the author regards it as a pathognomonic sign of great value. It may also be utilized for the detection of malingering. As ulnar analgesia is also frequently found in epileptics, its presence is useful for a diagnosis between the convulsions of epilepsy and those of hysteria.

The symptom was found by him not to be limited to general paresis and epilepsy, but in 43 per cent. of the asylum inmates besides.

DR. CHAPIN ON DELAYED ADMISSIONS.—Men of large clinical experience in psychiatry, knowing the necessity for prompt and unobstructed early treatment of the insane away from their homes, have been pretty much of one mind on this subject. Dr. Chapin, in one of his reports, says:

"The enactment of more stringent laws regulating the admission to hospitals, has been followed usually by a delay in placing patients promptly under treatment during a curable stage. The necessity of conforming to certain requirements about a matter usually regarded in the nature of a private affliction, exercises an influence to defer any action which seems to carry with it a certain amount of publicity. A hesitation naturally exists in taking steps for the admission of a patient to a hospital, which, in the estimation of relatives amount to a legal disqualification or incapacity that may operate in some way unfavorably or disastrously to personal interests, if recovery takes place. To them there seems an incongruity in resorting to legal measures as a

preliminary step in order to place a patient under medical treatment. As the existence of this feeling is deep seated and traditional, some allowance and concession must be made to it, much as we may sympathize and be in harmony with every effort that may be made to prevent the arbitrary exercise of power, or abuse, that might arise in the absence of any law.

FORENSIC PSYCHIATRY.

THE IMPULSIONS OF EPILEPTICS.—M. V. Parent (*American Medico-Surgical Bulletin*) opened a discussion before the French Association of Alienists, at Bordeaux, on the impulsions of epileptics. After a general review of the subject, he concluded that epilepsy is not *per se* a reason for irresponsibility, but that there might occur with it irresistible impulsions, producing absolute irresponsibility, even with perfect consciousness of the act on the part of the subject, and that, aside from this condition, every epileptic, not insane or unconscious must be held responsible, with only possible attenuating circumstances.

M. Vallon held that the examination of the act itself must be taken as the true medico-legal criterion, and cited cases in which undoubted epileptics had committed crimes that had no relation whatever with their disease; and in reply to M. Garnier, who insisted on the general attenuation of responsibility of epileptics, he claimed that no such general rule could be maintained—only the study of the particular act would sometimes suffice. The medical expert should show the court the close connection between the disorder and the various mental disturbances, which might be a casual factor of crime in many cases.

M. Carpentier called attention to simulation and to the absence of constant characters, establishing beyond question the epileptic nature of the impulsions. It must be remembered that there was, in some cases, the power of control which was not exercised on account of the patient's confiding in his irresponsibility as an epileptic.

M. Regis recalled a case where the patient was able even to voluntarily inhibit diurnal attacks, and called attention to the need of the consideration of epilepsy in military courts, where injustice was too often the result of the exclusion of medical advice.

NEURO-ANATOMY.

RECENT INVESTIGATIONS MADE IN THE DOMAIN OF HISTIOLOGY OF THE NERVOUS CENTRES. Obersteiner, *Wiener Medizinische Presse*, 1895, no 16, p. 602. Abstract.

But a few years ago the anatomical elements and tissues were designated as nerve fibers, nerve cells, and the non nervous elements as Epithelium, Vessels, supporting maternal connective tissue and neuroglia.

Now we have tissues having an ectodermic origin or the neurone, the neurocit, the neurit, glia and epithelium.

In the new classification if we separate the vessels, all the other constitutive elements of the cerebro-spinal axis proceed from the ectoderma. The nervous centres would not contain any connective tissue with a mesodermic origin. What was formerly supposed to be the connective portion of the supporting substances is exclusively formed by neuroglia cells with their extensions; now, these cells proceed from the primitive neuric epithelium.

The epithelium of the central canal and the ventricles represents in some manner the remaining portion of the cells which, originally, exclusively form the medullary canal and from whence proceed all the nervous cells and the future neuroglia cells. What was formerly called nerve cells and nerve fibers, are called neurones.

The name neurone is precisely given to the whole thing formed by a nerve cell and its principal extension which generally becomes a nerve fiber. The nerve cell has a second extension which divides and forms terminal arborisation and the cell generally shows other extensions which form also a part of the neurone. This theory of the neurone rules our actual conception of histo-

logy of the nervous system. Every nerve fiber is supposed to emit lateral or collateral branches which come off directly and form other terminal arborisations.

Formerly it was thought that the nerve fiber proceeded from a cell and terminated in another cell, that from this one was projected a new fiber and so on. It was thought that nerve cells communicated together and with the periphery, for instance with the muscles through the intervening of nerve fibers. Now it is demonstrated that nerve cells communicate with one another by means of contiguity; that the terminal arborisation of a first neurone surrounds in some way another neurone's cell without penetrating its mass.

The extension of the cell, which forms the fiber, has been called, cylinderaxil extension, *neurit*, *axone*, nerve extension, principal extension; the other protoplasmic extensions are known as *dendrites*.

The first is distinguished by very distinct outlines which make it look like a small wire; on the contrary the protoplasmic extensions are rough and knotty. It was said: Every nerve cell is continued under the form of a nerve fiber. Now we say certain cells, cells of *Golgi* for instance, whose neurit ends nearly immediately in an entanglement of small fibrils have not a real cylinderaxil extension. This extension sometimes even completely misses in some nerve cells, in the anaxones of Lenhossek. Finally, it is proved that some nerve cells have several cylinderaxil extensions.

EDITORIAL.

[*All Unsigned Editorials are written by the Editor.*]

The Long Looked for "Transactions" of the first Pan American Medical Congress, held at Washington, D. C., September 5th, 6th, 7th and 8th, 1893, have come at last, and though late, the volumes are quite welcome.

The delay has not been due to President-General Reed or to any of his medical co-laborers but to Congressional tardiness and delayed appropriations.

The transactions will interest every reader of this journal and repay purchase and perusal.

The American Microscopical Society will hold its nineteenth annual meeting in the new Carnegie Library Building, Pittsburg, Pa., Tuesday, Wednesday, Thursday and Friday, August 18, 19, 20 and 21, 1896. A hearty welcome will be extended to all interested in the microscopical sciences. Applications for membership and titles of papers to be read at the meeting should be addressed to A. Clifford Mercer, M.D., President, Syracuse, N.Y., or to Wm. C. Krauss, M. D., Secretary, 382 Virginia street, Buffalo, N.Y.

The next Annual Meeting of the British Medico-Psychological Association will be held in London, at the rooms of the Association, 11, Chandos Street, Cavendish Square, W., on days in the latter part of July. Notice of the dates and other particulars will be issued in due course.

A considerable part of the time of the meeting will be devoted to discussions, papers, and demonstrations on subjects connected with insanity and the structure and functions of the Brain and Nervous System.

The Council confidently hope a large gathering of members will be present to show their interest in the work of the Association, to read papers and take part in the discussions. They desire to provide a programme worthy of the Association and of the wide field of scientific and social subjects with which the association is concerned.

It is desired to incorporate as large a portion as possible of the programme in the next circular, therefore the secretary

shall be glad to receive at an early date the title of the paper which any member proposes to read at the meeting, or subject he designs to bring before it.

W. Julius Mickle, M.D., President-Elect, Grove Hall, London, E.; Fletcher Beach, M.B., Hon. Gen. Secretary, 64, Welbeck Street, Cavendish Square, London, W.

American Medico-Psychological Association.

—The fifty-second annual meeting of this association will be held at Hotel Brunswick, Boston, from May 26th to May 29th. The occasion will be one of more than usual interest and a large attendance is expected.

Notice is given of two amendments to the constitution and by-laws. The first by Dr. Edward Cowles, to amend Article IX of the constitution to read: "The President and Vice-President for the year shall enter on their duties at the ending of the business of the annual meeting at which they are elected." The second by Dr. G. H. Hill to amend Article I of the by-laws to read: "The places of meeting shall be in Washington, D.C., and Chicago, Ill., alternately."

Missouri State Medical Association.—The annual meeting of the Missouri State Medical Association will be held in Sedalia on Tuesday, Wednesday and Thursday, May 19, 20 and 21, convening at 10 a.m. on Tuesday, the 19th.

A "New Specific" Syphilitic Tumor.—The *London Lancet* refers to an abstract in a recent number of the *Neurologisches Centralblatt*, of a case published by Dr. Gajkiewicz as especially interesting and important, because apparently the tumor removed was a syphilitic one. The patient had no obvious signs of syphilis, but complained of constant severe pain in the right temporal region, increased by pressure or tapping. Ten years before he had received an injury to the right frontal region, and two months before an injury to the right temporal region, which had apparently been the starting-point of the present pain. He had typical attacks of left-sided Jacksonian epilepsy, with subsequent weakness of that side of the body. The fits always commenced in the upper extremity, and were frequently ushered in and accompanied by a feeling of pain, heat, and burning. The optic discs were a little obscured and the veins very large. There were enlarged glands in the neck, and a few months before there had been a swelling on the skull which had spontaneously disappeared. Energetic antisyphilitic treatment produced only temporary improvement, which was followed by an increase in the intensity of the symptoms. The attacks became

more frequent and more severe, and were often accompanied by loss of consciousness. Trephining was performed over the right hemisphere at a point corresponding to the centre for the upper limb and face. A tumour was removed, which microscopic examination showed to be gummatous. After this, as many of the slighter symptoms still persisted, antisiphilitic treatment was again pushed and the patient completely recovered from all his symptoms.

This is another proof of the persistency of syphilis and of its proneness to attack the nervous system "after many days," under suitable pathological provocation. It is also another confirmation of the value of a conjoined operative procedure and specific therapy.

The *Lancet* introduces this example to stem the rising tide of opposition against cerebral surgery, which, though undoubtedly lately much abused by novices with the knife and premature fame seeking surgeons, is still in requisition as a valuable procedure as the preceding case and many others like it with equally satisfactory results have established.

Medical Management of Institutions.—The *Clinical Recorder* presents this subject so fully in accord with our own views that we take pleasure in transcribing with our endorsement the following editorial on the above subject:

"It is the fashion to ridicule the business ability of physicians—and the general public accepts as an axiom the statements that doctors are unfit to manage medical institutions. In all questions outside of pure science or practical medicine they are looked upon as children of larger growth; and the complacent layman takes unto himself the credit for success that is almost always due to the labors of his medical associates.

"Of course this is largely our own fault. It is the custom with many of us to sneer at physicians as practical men and to praise to the skies the supposedly inherent business ability of every man outside our body.

"Yet we venture to believe that this idea is entirely wrong; that the premises on which it is based are unfounded; that its conclusions are unwarranted. Institutions under medical control are at least as well managed as those under lay direction. Some of the best managed institutions that we know are practically controlled by physicians; and in others again one of the chief duties of the Medical Staff appears to be to watch the Board of Trustees, to direct and control its actions, and but too often, to rectify its mistakes.

"For it does not require great business ability to manage the average medical institution. Its affairs are not complicated and its finances are simple. But it does require a large amount of that peculiar kind of medical knowledge which deals with the social and professional side of our science.

"We would not hesitate to challenge comparison between institutions under lay and under professional management. We are positive that the latter would be found to be as economically and satisfactorily administered as the former, and more satisfactory in the quality of their work and their relations to the profession at large."

The Recommendation of Sanitaria.—One of the great advantages of sanitaria, well conducted, is in the securing of home comforts and the *négligé* of home, away from home.

Another advantage is in latitude, another is in congeniality of environment, another in the company, another is in the *personnel* as well as peculiar skill of the medical man in charge and his special methods of treatment.

The physician who recommends sanitaria should consider all of these aspects of the sanitarium question. Wherever and whenever practicable he should visit these institutions, especially those found in our advertising pages, all of which are worthy of medical commendation, and acquaint himself with the eminent physicians in charge and the advantages of each for particular patients.

Patients, physicians, hospitals and sanitaria have peculiarities and special features apparent to discerning physicians.

Some patients, too, should be within ready access of friends. Others should be far away from them, the further the better. Some need a cold latitude, some a warmer, some the sea, some the mountain air and some the valley. Some are charmed by water scenery and some by land alone. The psychical satisfaction, mental tranquility and physical comfort of the patient, contentment, pleasure and peace in his new environment, often do good like a medicine, are often worth more than medicine without them in the therapy of many diseases, especially in the therapeutics of the neuropathic and psycho-neuropathic.

Medical men should generally become more intimately familiar with the sanitaria and sanatoria of the United States and their medical heads, advise their more frequent use and charge suitable fees for intelligent advice concerning them.

Such a course would increase appreciation both of these institutions and of medical counsel concerning them.

A German Oscar Wilde.—The well-known tenor singer, Cordes, has been convicted in the Berlin Criminal Court of the grossest immoralities and sentenced to three years' penal servitude. A number of young noblemen have been led to commit unspeakable crimes by the singer's example.

"Stuck on Arsenauro."—Our esteemed, handsome and accomplished friend from Kentucky, Dr. Thomas Hunt Stucky, has "got stuck" on arsenauro as a red corpuscle rebuilder and is not afraid to say so. He's a therapeutic goldbug of the first water and the gold combinations as alteratives is one of his latest themes in the *New York Medical Journal* for November 25th, 1895. He makes a good showing for arsenauro with colored lithographs of the red blood corpuscles before and after taking, from his clinical records.

How Opium Habitues are Made.—The following letter to Dr. C. H. Hughes from a physician sending him a victim for treatment, reveals the *modus operandi* of the development of the opium habit in many instances:

This young lady has been a constant sufferer with neuralgia of the face and head for about three years. She has taken all the neuralgia medicines that I can find recommended and nothing gives relief except morphine, and she has been taking an increase of dose now since Dec. 1st, 1895. The last twenty-four hours she has taken nine doses of from one and one-half to two grains at a dose hypodermically. I will give you some of the remedies that I have used: Antipyrine, antifebrin, antikamnia, quinine, potass. iodide, ammonia muriate, salicylate of soda, salol, gelsemium, aconite, cimicifuga, guaiac, blister to temple, had her teeth filled and afterwards several extracted, Fowler's solution, iron, strychnine, potass. bicarb., and several other physicians have prescribed and she has taken all the patent medicines she could find recommended. I have advised her father to send her to St. Louis to seek the advise of a nerve specialist. She will submit to an operation if necessary. I told them that probably if the nerves were divided relief would follow; also spoke to them about the probability of it being necessary to remove the gasserian ganglion. However, I deliver her to you; she is your patient, pursue the course you think best.

Tardy Medical Justice to Coleridge.—Every neurologist who has had much to do with the treatment of opium habitudes has after noted, after the habit has been broken, the existence of pathological conditions began before the inception of the habit and marked by it, notably, neuralgias, gastralgias, pyloric and lower enteric painful affections, so that these unfortunate slaves to the tyranny of the most vicious of drug habits are often more sinned against than sinning in the judgements formed of them. A recent unsympathetic review by the *London Times* of this great genius of letters in which this great organ of British opinion spoke of Coleridge's life as "a perpetual cry of ill-health," which meant, "little less than opium and indolence," calls out our old and time honored British medical, the *London Lancet*, as follows:

This opinion brought forth from the granddaughter of Mr. Gilman, "with whom the poet lived for more than eighteen years," a reply containing a most interesting account of Coleridge's chronic ailment, penned by Mr. Gilman, which accounts for much of his idiosyncrasies of character and habits. The passages cited are as follows:

"From some expressions in your letter I am induced to give you a short account of Mr. Coleridge's personal sufferings and their physical causes, which sufferings at the last were agonizing to himself and to those about him. After his decease his body was inspected by two able anatomists appointed by Prof. Green, a task too painful for either him or myself to perform. The left side of the chest was nearly occupied by the heart, which was immensely enlarged, and the sides of which were so thin as not to be able to sustain its weight when raised. The right side of the chest was filled with a fluid inclosed in a membrane, having the appearance of a cyst, amounting in quantity to upward of three quarts, so that the lungs on both sides were completely compressed. This will sufficiently account for his bodily sufferings, which were almost without intermission during the progress of the disease, and will explain to you the necessity of subduing these sufferings by narcotics and of driving on a most feeble circulation by stimulants, which his case had imperatively demanded. This disease, which is generally of slow progress, had its commencement in Coleridge nearly forty years before his death. To the general observer his disease masked itself, and his personal sufferings were hidden and concealed by his fortitude and resignation and by the extraordinary power he had of apparently overcoming and drowning them, as it were, at time in fervid colloquy."

The account here given of the post-mortem examination was probably not intended for professional perusal, and is, therefore, not so precise and definite as to be quite clearly interpreted. Thus it is somewhat puzzling to define the condition described in the right pleura. The large "cyst" mentioned could hardly have been a hydatid. It is more likely, we think, that it was really a pleural effusion, which seemed to be encysted from the presence of adhesions of the lung to the chest wall. If this be so, then this effusion may be regarded as dropsical in character, occurring toward the close of life in a subject of chronic cardiac dilatation. The account which describes the enormous size of the heart and the extreme tenuity of its walls is silent as to the pericardium, but such a degree of enlargement may well have been due, to universal adhesion of the heart to the pericardial sac, from inflammation of the latter in early life. The record, however, suffices to prove that this intellectual giant must have suffered more than the world was aware of, and it can be understood that his "indolence" as well as his opium habit had a physical basis. It can only add to the marvel with which his achievements are justly regarded, that one so physically disabled should have made such extensive and profound contributions to philosophy and literature.

To Correctly Demarkate Insanity from Crime

is often no easy task, requiring keen analysis of character, coupled with large clinical knowledge of the insane and familiar observation of criminals. To those who believe that about all criminals are "neurotics," of course, there is no task about it. With them, to be a great criminal is to be a great neurotic, or, to use the more accurate and more expressive term, neuropath.

The line of demarcation between normal and abnormal displays of immorality and crime is disease. When the physician fails to find disease in his reasoning upon questions of insanity, he is always at sea, if he contends for the existence of mental aberration without. If he can find no disease plainly demonstrable or markedly presumptive as the basis of the mental derangement, the question is beyond his legitimate province and he is out of his proper place on the witness stand. Under such circumstances he had "better," as a learned but prejudiced English judge once improperly said to a testifying physician, "be at home with his patients." Disease, involving the brain and mind in disorder, is the basis of all insanity; it is all there is of insanity.

Dr. Henry W. Coe, he that stands as the valiant sentinel in the watch tower of medicine on the Pacific Coast and so well and faithfully guards the professions' welfare there, pays the modest edition of this journal a scarcely deserved compliment, which makes us feel good all the same, and for which we are duly grateful. It reflects the charity of the sentinel editor's good heart. When ever we see Coe's name or recall his genial and talented personality we are reminded of the story of the man who saw Co. on so many signs and his conclusion that Co. must be an important personage in the business world, and he is as important as Coe is indespensable to the professional and editorial world of the Pacific coast. He can say such nice things about a co-laborer in the editorial vineyard and so gracefully, too. He is a medical Co-worker whom his Co-adjutors can count on for encouragement in the trying ordeals of a life editorial. The cordiality of Coe, of the *Sentinel*, is only equaled by the geniality of Love, of the *Mirror*, and the urbanity of Hamilton, of the *Journal*,—a trinity of good fellows. But we must stop here to "come again" on the subject of good fellows in the corps editorial of the medical profession, for we fancy some one asking how about Frank Foster of the other journal and hosts of others too numerous to mention, "*et id genus omne.*" Its no use to discuss them further, we have not editorial space enough in which to read their virtues. They must be seen and heard outside their sanctums, at the annual editorial banquet, for instance, to be appreciated in all their glory. There the American medical editor lets himself loose and proves himself the "peer of any man" and between me'n'you the menu disappears under his ministrations like the memory of his mortal cares with a miraculosity, marvelous and mirable, while his spirits go up as the menu goes down. Here we stop. No writer ever did do an editor justice, especially a medical editor.

The American Medical Association meets in Atlanta, Ga, May 5th, and all delegates to this society should embrace the opportunity of visiting "Lookout Inn," a magnificent and historic spot on the crest of Lookout Mountain, overlooking Chattanooga, Tenn. A special invitation is extended to physicians to spend a week with us, en route to Atlanta, and a complimentary rate will be made for the occasion. Trains up the Mountain make close connections in both the Central and Union Depots, Chattanooga, running through to the Inn without change. Fo-

further information and handsome, illustrated booklet, address M. S. GIBSON, Lookout Mountain, Tennessee.

British Medical Association—Psychology.—

The sixty-fourth annual meeting of this Association will be held at Carlisle, July 28th, 29th, 30th, and 31st, 1896.

The section on psychology will be presided over by John Archibald Campbell, M. D., F. R. S. E. The Vice-Presidents are Alexander Stewart Merrick, M. D. and M. D. Macleod, M. B.

The President will open the Section with an Address, and the following subjects have been arranged for discussion:

I. The Certification of Insanity; in its relation to the Medical Profession.

II. The General Paralytic: His Practical Management and Treatment in Asylums.

III. The use of Sedatives and Hypnotics in the Treatment of Insanity.

Papers are invited on:—

I. The "Hospital" Treatment of the Insane in Asylums.

II. The best methods of providing for the Chronic Incurable among the Pauper Insane.

III. The Treatment of Insanity by means of Thyroid and other Animal Extracts.

IV. The Transmission of accidentally-acquired forms of Insanity.

These subjects have been decided upon in view of the interest which they are likely to possess for this Section, and it is hoped that Members will offer contributions embodying their observations on these or any other practical subject.

Psychopathic Faith Healers, Schlatter et al.—

The daily press has become so morbidly sensational that it is constantly on the lookout for neuropaths with wonderful tales of woe or records of harrowing deeds of crime or wonderful powers of healing. Through its aid some crank or other is constantly kept before the public. It revels in morbidity and neuropathic coloring. The normal world is become too tame and common place for the enterprising news gatherer of the modern daily journal.

A short time ago it was Francis Schlatter, the famous faith healer of the "wild and wooly west." He has disappeared from view and now it is Schaeffer, of Springfield.

Schlatter has a record of insanity and treatment in an asylum in Switzerland. He was a scholarly student who became insane from over study, etc., and in his insanity

first took up the theme of perpetual motion, merging afterwards into religious insanity.

While Schlatter was working his so-called therapeutic wonders at Denver, we obtained from a competent medical observer of that place, a prominent neurologist who knew him well, the following account of the famous "mind healer" and his methods and results:

DENVER, Oct. 22d, 1895.

My dear Dr. Hughes:

I have paid some little attention to the career of Schlatter and have watched him at work. He stands in front of Fox's house and the sufferers in a long line come up one by one. He takes each by the hand and at the same time grasps a number of handkerchiefs in his left hand. Staring in space for twenty or thirty seconds he moves his lips as though in prayer. Then the patient passes in and Fox gives the blessed handkerchiefs back to the owners.

When he says anything it is that the patient must have faith and that "The Father" will heal him in four months or two months or six months as the case may be.

He is reported as saying that The Father has commanded him to do or not to do certain things. For instance, he said some weeks ago, that The Father had told him it was not at all necessary for the afflicted to come in person; it would do just as well to send their handkerchiefs to be blessed and then wear the handkerchief.

Sometimes he has alluded to himself as "The Messiah." He has a German face over broad between the malar bones and wears a full beard with long hair parted in the middle and curling over his shoulders. He is said to have been a shoe maker in Denver, but when I first heard of him he was in New Mexico, where he made himself notorious by praying on the street and by speaking of himself in New Testament phrases as The Messiah and claiming divine ability to heal.

Two newspapers, the *News* and the *Times* have shown remarkable zeal in booming the man, heralding his coming to Denver and talking editorially in such a way as to make it appear that they fully believed in his miraculous power. They have done their best to find cases of cure but it is evidently remarkably difficult for them to get cases of anything but the vaguest claim to improvement. I know of no cure or semblance of cure in any serious case and this has surprised me greatly. For several weeks he has been seeing several hundred people every day and in that number there must of course be many hysterics so there ought, on general principles, to be a considerable aggregate of hysterical symptoms cured at least for the time being.

No doubt his saying that the cure would come in four months has much to do with this. Some say that they feel a peculiar electric sensation on grasping his hand. Most of those who go to him are evidently of a very low class, but, of course, there are some whom we would expect to know better.

As to the man himself, it seems to me that he is merely a paranoiac who has happened to find the newspapers ready to advertise him. He shows his sincerity by persistently refusing money. Why the papers have taken such an interest, I can't tell. The City Cable Company has a considerable interest in keeping up the craze, but I don't suppose they paid the papers at first.

The real subject for study is the gullibility of the people, but we have that illustrated so often that I suppose we ought not to be surprised at it.

You may use these facts and opinions as you please, doctor; only don't allow my name to appear in print in connection with the case. My practice comes very largely from the mentally ill-balanced and I don't care to prejudice them against me in advance.

These are but repetitions of "the old, old story" so familiar to alienists of a brain broken under the stress of adverse environment and hereditary neuropathic instability, with religious paranoia as its sequel. The doctor who writes us makes the right diagnosis.

American Medical Publishers' Association.—The Third Annual Meeting of this Association will be held in Atlanta, Ga., May 4th, 9:30 a. m. From present indications this meeting will be the most successful and largely attended in the history of the Society. A number of interesting papers are on the program, and many have been promised on subjects of vital importance to every one interested in the progress of medical journalism.

A special invitation has been extended to the members by the management of "Lookout Inn" to visit their magnificent and historic spot, en route to the meeting in Atlanta.

Members of the Association and their families will receive free transportation from Chattanooga up the mountain and return, one day's free board at the Inn, and a half rate of \$2.00 a day as long as they remain.

Neuropaths in Medicine.—Under the caption of "Morbidly Inclined Medical Students," Dr. I. N. Love, of the *Medical Mirror*, of St. Louis, gives the profession new reflections on the subject, which demand consideration of medical educators. His words are pertinent and pointed.

A true physician is as Chesterfield said of a Christian, "the highest style of man," an untrue physician may be the worst possible style of man.

The moral character of medical students and licentiates to practice, is, in a perfunctory way, inquired into by those having authority to grant diplomas and licenses to practice medicine but neurotic hereditary tendencies, neuropathic

conditions and psychopathic personal or family peculiarities of applicants for matriculation or practice are not inquired into. A well-known imbecile, idiot or a lunatic might be refused, but the mental defect must be very marked in this direction, such as a novice and not a neurologist might readily detect, to secure disbarment from many medical colleges, whereas as all neuropaths should be discouraged from the study of medicine and debarred from practice, if admitted to study and capable of going through a medical college course. Dr. Love, the author of the editorial we refer to, says:

"Every medical college worker will recall the fact that some time during his career there have been cases of students who developed a special fondness for the morbid and horrid, and that with many of these moral perverts, fortunately their improper development was so rapid that they were not permitted to graduate, but now and then unfortunately some are possessed of sufficient self control to hide their cloven feet and secure diplomas and we do not doubt that many such commence the study of medicine with a view to the securing of knowledge which will be of service to them in the pursuit of crime. Undoubtedly special medical knowledge fits a man to be a more expert criminal, and for this reason college faculties cannot be too careful and too discriminating in the matter of accepting students and scrutinizing them during their entire student life, and they should promptly get rid of them if qualities such as we have suggested should develop."

"I have for long been of the opinion that the study and the work of a physician should make him either a better man or a worse man. There can be no middle position. Either his sympathies, his finer feelings, his nobler sentiments are aroused or else his love of the unnatural, the tragical, the gruesome, is developed, tending soon in the direction of a love of crime."

"Their minds are impressed not with the beauty of the human organism but with its ugliness. They are attracted by the abnormalities in nature of which they read, of which they hear their elders discourse and which they see in demonstration or diagnosis. They come to the study of the body when their natures are first responsive to the blind promptings of carnality and what they learn appeals rather to that instinct than to whatever higher intelligence they may have. They are fascinated by their shallow insight into what may be called the mechanism of the passions and their creed, voiced or dumb, but still their creed, is a

debased materialism that manifests itself in irreverence for the divinity that is veiled in the flesh which festers and decays. They seem to be contaminated in their souls by the effluvia of the dissecting room and to acquire moral septicaemia. This will not be denied by those familiar with a certain comparatively large class of medical students in their daily walks and conversation. The doctor in chrysalis is too often in his speech suggestive of the sewer, and unbridles his passions in the interest of science.

"Under the mask of scientific inquiry they gratify a sensuality that grows in intensity until its manifestations take strange forms and phases."

The writer refers to the case of the medical student, Durrant, in San Francisco, charged with a most horrible murder of a young lady to conceal a horrible crime against nature, humanity and morals, the case of Carlyle W. Harris, in New York, of Maxwell and Deustow in St. Louis and the White Chapel fiend, "Jack the Ripper," all medical students or medical men as illustrations, cases which had previously been referred to by a literary contemporary, the *St. Louis Sunday Mirror*, to paint a similar moral, and further truly says, "this subject involves a question of ethics greater than the crime of advertising. Without intending to condemn either the mentality or morality of all the embryo followers of Hippocrates or Æsculapius it may be said that there are a great number of young men whose embarking in the exploration of the mystery of the human system is marked by a disintegration of conscience and more or less evident perversion of morals."

We are unwilling to go so far as our illustrious contemporary. But we would say that there are a number of students, not very great numbers, but too many students annually matriculated of neuropathic tendencies and either perverts or fit subjects for moral perversion by reason of bad heredity and neuropathic instability of organism, for the good of the profession or the welfare of the world.

Our colleges from the days of Hippocrates till now have been careful of the morals of those admitted into the sacred precincts of the healing art as the Hippocratic oath bears witness and moral safeguards have been thrown around the student by oath, certificate and precept from time immemorial, till ours is acknowledged to be the purest in moral make up of all the professions, but there are devils in it, as there are in the best of bodies.

But the devils in our profession are largely neuropathic perverts with far greater opportunity for mischief than is afforded in any other occupation and hence the greater

necessity for quarantine at the portals of all reputable medical colleges against the neuropathic perverts, the prurient fiends, erotomaniacs and what our contemporary wittily calls the third sex genus.

There are the Oscar Wildes in medicine, sexual perverts that should be barred out, sexual erotopaths that should be unsexed, and embryo moral perverts and monsters with latent morbid instincts and wrong propensities engrafted upon neurotic instability that should not be developed by medical study. There is no legitimate place for the neuropathically unstable and the psychopathically unfit in the ranks of medicine. Purity in psychical areas and neurotic stability throughout the whole cerebro-spinal axis and sympathetic system are the only safe foundations for the physicians to build upon for the proper practice of medicine.

The *Mirror* reflects a growing medical conviction already quite familiar to alienists and neurologists of wide observation and experience. A medical college, with its gynecological clinics, is a congenial soil for the morbidly neurotic, in which morbid eroticism and sexual neuropathy of various kinds may be developed and matured from latent hereditary aptitudes, like the germs of the grosser physical diseases, bringing morbid life and destructibility to light in proper soil, prepared by previous failure of vital resistance. A neuropath should never be encouraged or permitted to become a medical student. Medicine is a study for the sound of mind and sound of body only. It is an occupation only fitted for the man of inherent neural stability.

It is fuel to the slumbering fire, the smouldering coal of the neurotically unstable.

The Bad Results of Jury Diagnosis of Insanity.—Dr. R. M. McCall, of Anna, Ill., physician to the Southern Illinois Hospital for the Insane, thus animadverts upon a phaze of this evil in the *Medical and Surgical Reporter*, under the head of "Abuses in the Trial of the Suspected Insane:"

Having been connected with an insane hospital for some years, and my duties making it incumbent upon me to receive patients on their admission, and having studied carefully the histories written up in the medical interrogatories by the Medical Commission before whom they are tried, I have become convinced that there is frequently gross neglect, or a failure on the part of the examining board to properly study up cases so as to make a decision which would be to the best interests of all concerned.

I call to mind a lady of refinement and intelligence, a victim to typhoid fever with active delirium of a very persistent character. She was tried by a Commission of Lunacy, pronounced insane, and brought to the hospital. When she arrived here her temperature was 103° F., active delirium, abdomen tympanitic and tender, and every symptom indicative of typhoid fever. The second day after her admission she had two very severe hemorrhages of the bowels, and could we wonder, after being transported here in an ordinary car (no sleeper) one hundred and fifty miles, changing cars at two or three stations?

All this occurred in the third week of the fever, but thanks to a good constitution, in two weeks she was convalescent, and with a return of physical health the mind resumed its normal functions. I will use her own words in expressing her feelings in regard to this matter:—"Oh, why did they not keep me at home? The Board of Inquisition that sent me here has blasted every prospect of my life. I have my way to make in the world, and now every avenue is cut off, and I shall be met by the expression, 'Oh, she has been in an insane asylum, we can't trust her.'"

There were two ladies admitted here who had but a very short time before passed through the parturient period, suffering with every characteristic symptom of puerperal fever or peritonitis; temperature registering 105° F., and in an active state of delirium. In this condition they had been transported great distances, when as we know, they required the greatest quietude, and the watchful care of a skilled physician. It is useless for me to say that the result of hospital treatment was not what we always wish for. They both died.

If we add to the cases like the above the many who are kept out of the Illinois Asylum until their cases become hopeless because juries are not convinced of the existence of insanity, we have a frightful arraignment against the law relating to the commitment of the insane by jury trial. Disease is not a good subject for jury diagnosis. It is a right of the insane to have a medical decision by medical men.

In New Hampshire when application is made to the judge of probate, or the supreme court or any justice thereof, for the committal of any person to the asylum for the insane, the said court or judge appoints two reputable physicians to examine such person, with or without notice to him or her from said court or judge and immediately

report the result to said court or judge, who may, upon such report and such evidence as can be produced, order such person to be committed to the asylum. And the supreme court or any justice thereof shall at any time, with or without notice, upon application and due cause shown, investigate the question whether there is sufficient reason for the detention in said asylum of any person who has been committed thereto, and shall order his or her discharge when such order ought to be made, without the formality of a writ.

Ray Hall, Butler Hospital.—It is always pleasing and interesting to note generous appreciation of hospitals by wealthy philanthropists and of alienists and other physicians by hospital managements. The Butler Hospital which itself commemorates the name of one of the most zealous and worthy of New England's alienists, has also a memorial ward to Dr. Sawyer, one of its accomplished superintendents whom we knew well in his life time, and has lately finished a memorial hall commemorative of our old friend, the benefactor of our youth, Dr. Isaac Ray. This building, like the worthy and distinguished alienist whose name it bears, is destined to do glorious service for the good of the insane. The report before us (52d annual, Jan., 1890) thus speaks of this useful addition to the resources of Butler Hospital among the entertainment records of the report:

The Ray Hall was not completed until after the regular entertainments for the winter and spring had closed, but through the efforts of its president, Col. William Goddard, a concert was given in June by the members of the Arion Club, of Providence, Dr. Jules Jordan conductor. The entertainment afforded was greatly enjoyed both by the residents of the Hospital, and by the invited guests who favored us with their presence on the occasion. Since the formal opening in June the Hall has been used for all entertainments, as well as for religious services on Sundays, and proves of as much pleasure and satisfaction as was expected. Since the last report entertainments have been furnished by Miss Alice Lock Pitman, Mr. and Mrs. Edward Hoffman, Mr. Ernest Clarner, the Arion Club, the Talma Club, Mrs. Theron Fell, Mr. William R. Lane, the Pilgrim Congregational Church Choir, Mr. Charles N. Snow leader, Reeves Orchestra on Christmas eve, Mr. Frank Hunter Potter, Mr. Coombs and Miss Brown, and by a company of clever amateurs under the direction of Mr. and Mrs. Howard Hoppin, of Providence. A lecture upon the Planet Mars, was given by Mr. William Maxwell Read, of Andover, Mass.

It is esteemed by most of the patients a great pleasure to attend these entertainments, all of which have been of a high order of merit.

CORRESPONDENCE.

Editor of Alienist and Neurologist:

Allow me through your Journal to call the attention of members of the Medical profession of Missouri to Article III., Constitution of the Missouri State Medical Association, which reads as follows: Members of this association shall consist of the classes, to-wit:—

- 1st. Delegates.
- 2nd. Honorary Members.
- 3rd. Members by Invitation.
- 4th. Permanent Members,

from which it is obvious, that a physician not entitled to membership under either of the last three heads, *must* be a delegate from some local society to become a member of the Missouri State Medical Association.

To increase the attendance and membership of the State Association, it is urgently suggested that physicians living in counties or districts where there is no medical organization, to proceed *at once* to organize local Medical Societies in harmony with the Constitution and By-Laws of the State Association and the Code of Ethics of the American Medical Association.

By this means the usefulness and good influence of the State Association can be extended and its membership greatly increased.

It is earnestly desired that every portion of the State shall be represented at the next meeting of the Missouri State Medical Association at Sedalia.

In view of the tone and numbers of the Medical profession of the state, there is every reason why the Missouri State Medical Association should occupy a front rank

among medical organizations. To this end the co-operation of every regular physician throughout the state is solicited. Copies of the Constitution and By-Laws of the Missouri State Medical Association may be had free of charge, by addressing the Recording Secretary, Dr. Frank R. Fry, 3133 Pine St., St. Louis, Mo.

C. F. WAINWRIGHT,
Cor. Secretary.

C. LESTER HALL, Prest.
Mo. State Med. Assoc.

REVIEWS, BOOK NOTICES, ETC.

REVISTA DI PATOLOGIA NERVOSA E MENTALE. Prof. Tanzi, Clinica di San Salvi, Florence, Italy.

Revista di Patologia nervosa e mentale is the title of a new Italian review published under the direction of Professors E. Tanzi, A. Tamburini and E. Marselli, and edited by Drs. E. Belmondo and E. Lugaro. Under such management the success of the journal is assured. The intention is to issue it monthly so that at the end of the year it will form a volume of about five hundred pages.

The scope of the new review is thus stated by the editors:—

"It does not pretend to substitute nor supersede other journals of the specialty which have for years had a well-merited and wide circulation among neurologists and alienists, but it proposes to fill in Italian psychiatric life a well defined function, viz.: that of an Italian *Centralblatt*."

"Observations, innovations in laboratory technique, new instruments, isolated clinical cases of interest, brief recapitulations of original investigations theories, hypotheses, impersonal discussions and anything requiring prompt publication and capable of being put into a brief form, may be the subjects of original articles."

As will be observed, two of the directors of the new *Revista* were the founders of the *Rivista Sperimentale di freniatria* and it is proposed that the new review form a complement to the old one, making a specialty of reviews of all works of psychiatric interest.

The reviews are placed under several heads, viz.: Anatomy, Physiology, Experimental Pathology, Neuropathology and Psychiatry, and the January number contains comprehensive summaries of French, German, American and Italian works in these various lines, besides two short original articles by Drs. E. Lugaro and E. Pusateri, translations of which will appear in THE ALIENIST AND NEUROLOGIST.

The price is 12 lire per annum.

S. P. B.

"ELECTRICITY IN ELECTRO-THERAPEUTICS," by Edwin J. Houston, Ph. D., and A. E. Kennelly, Sc. D., is by two electricians holding high rank in the electrical profession.

Prof. Houston has served two terms as President of the American Institute of Electrical Engineers and is a co-inventor of the well known Thomson-Houston system of electric lighting.

Mr. Kennelly, Vice-President of the American Institute of Electrical Engineers, has made many contributions to the higher branches of electrical science, and was for many years principal assistant of Thomas A. Edison.

The combination possessed by these authors, of a thorough knowledge of electrical science together with an extended acquaintance in the field of electro-therapeutics, peculiarly qualify them for the task which they have undertaken in the preparation of this volume. There is reason to believe, therefore, that the result of their work will meet in a high degree the requirements of physicians who desire to read a treatise on the fundamental electrical principles of electro-therapeutics, which is at once authoritative and expressed in simple language requiring no special training in electrical science to understand.

The chief feature of the book is in the light which it throws on the *modus operandi* of electricity in therapeutics from the electricians standpoint of observation. There is yet room for an equally valuable book from the physician's and physiologist's point of view of electro-neurotherapy.

The book contains 412 pages and 128 illustrations and the price is \$1.00. It is published by the W. J. Johnston Company, 253 Broadway, New York.

THE PRICE LIST WHICH PARKE, DAVIS & CO. ARE NOW DISTRIBUTING, is an admirable catalogue in its completeness, convenience of arrangement, and wealth of miscellaneous information.

There is good ground for enthusiasm and for marvel at the amazing success of this firm. Recently they have opened two new branch houses to satisfy the rapidly growing demand for their preparations—one at New Orleans and another at Baltimore.

The products of this firm will materially aid you in fighting disease—they will make the battle easier and the victory more certain. They are what the Gatling Gun and the Hotchkiss and the Enfield Rifles are to the old smooth bore musket in efficiency.

The older and cruder *materia medicae* of the pharmacopoeia of the past, has largely given place to the newer preparations the introduction of which has been pioneered by Parke Davis & Co. To do without P. D. & Co.'s preparations is to do without a whole armamentarium of the most efficient and elegantly prepared therapeutic preparations in our *materia medica*.

This is why, when you meet an employee of Parke, Davis & Co., whether on the road or in the house, you meet an enthusiast. He does love to expatiate on the wonderful growth of "his" firm—the number of its laboratories, branch houses, agencies, and representatives; its twenty-nine distinct lines of pharmaceutical preparations and its six thousand different products.

THE APRIL MONIST OF INTEREST TO THE READERS OF THE ALIENIST AND NEUROLOGIST.—The April Monist opens with two articles on Roentgen's x-rays, by leading European scientists. Prof. Ernst Mach of Vienna describes a method of applying the new rays to an old device invented by him for taking stereoscopic or solid pictures of objects. Professor Schubert of Hamburg writes at length on the x-rays, reviews in simple language their history, embracing the researches of Faraday, Geissler, Hittorf, Pluecker, Crookes, Lenard, and Roentgen, discusses the physical character of the rays, and

lastly expounds the methods of work so successfully employed in the Hamburg State-Laboratory. Two beautiful actinograms accompany this article—one of a fish with shells in its intestines, and one of a lady's hand into which a needle had been run.

Edward Atkinson of Boston, practical financier and economist, writes a timely article on *The Philosophy of Money*.

An interesting contribution is "From Animal to Man," by Prof. Joseph Le Conte of Berkeley, California.

The usual Literary Correspondence and book notices, conclude this number. Single copies, 50 cents; Annually, \$2.00. The Open Court Publishing Co., Chicago and London.

The last article is a discussion of The Nature of Pleasure and Pain, by Dr. Paul Carus, with particular reference to the theory of the famous psychologist, Prof. Th. Ribot.

DIAGNOSIS AND TREATMENT OF DISEASES OF THE RECTUM, ANUS, AND CONTIGUOUS TEXTURES. Designed for Practitioners and Students. By S. G. Gant, M. D., Professor of Diseases of the Rectum and Anus, University and Woman's Medical Colleges, etc., etc. With two chapters on "Cancer" and "Colotomy" by Herbert William Allingham, F. R. C. S. Eng., Surgeon to the Great Northern Hospital; Assistant Surgeon to St. Mark's Hospital for Diseases of the Rectum; One Volume, Royal Octavo, 400 pages. Illustrated with 16 Full-Page Chromo-Lithographic Plates and 115 Wood-Engravings in the Text. Extra Cloth, \$3.50 net; Half-Russia, Gilt Top, \$4.50 net. The F. A. Davis Co., Publishers, 1914 and 1916 Cherry Street, Philadelphia; 117 W. Forty-Second Street, New York; 9 Lakeside Building, Chicago.

No superfluous language is used in this book. Every subject is classified so that one can obtain what he may want therein; the illustrations are new and up to date. The press-work, paper, binding, and the handsome chromo-lithographic plates are unsurpassed among modern medical works. Its moderate price renders it easily obtainable by every physician and student.

SYPHILIS IN THE MIDDLE AGES AND IN MODERN TIMES. By Dr. F. Buret, Paris, France. Translated from the French, with notes, by A. H. Ohmann-Dumesnil, M. D., Professor of Dermatology and Syphilology in the Marion Sims College of Medicine; Consulting Dermatologist to Various City Hospitals, St. Louis. Being Volumes II and III of "Syphilis To-Day and Among the Ancients," complete in three volumes. 12mo. 300 pages. Extra Cloth, \$1.50 net. Philadelphia: The F. A. Davis Co., Publishers, 1914 and 1916 Cherry Street.

This book is well worth perusal by both physician and literateur. Ohmann-Dumesnil, the translator, has done his work with his accustomed precision and good judgement in the choice of suitable English synonyms, so that the reading is as entertaining as fiction and as instructive as history.

ALBUM D' ALIENES.—This Album of the Insane by the accomplished Russian alienist, Prof. Paul Kovalevsky, is the best attempt we have thus far seen to portray varieties and features of insanity by photographic representation.

The index is in English with Russian synonyms in the Russian alphabet. The title page is in Russian and French, while the descriptions which accompany the photogravures are in English. This interesting little brochure concludes with a "groupe d' aliénés au travail" and with "Ecriture de paralytiques aliénés."

The book will entertain and instruct any alienist. The book is published by the author, Prof. P. Kovalevsky, rector of the University, Varsovie, Russia.

THE MONTREAL MEDICAL JOURNAL.—The March number of the *Montreal Medical Journal* contains an article on the new method of photography, illustrated with half-tone photo engravings of the experiments at McGill Medical College by Prof. Cox. One of the photographs clearly showed the location of a bullet in the leg of the patient operated on, and enabled the surgeon to quickly extract the foreign substance. They are reproduced in the *Journal*, which also contains a plate illustrating the procedure by which the result was obtained. As medical men are paying much attention to the development of the new discovery there will be a great deal of interest in the article in question.

THE YEAR BOOK OF PRACTICE will prove of decided service to many young physicians going out just now to practice, for it will recall to them the latest procedures in the practice of medicine and tell them what has been going on in the medical world and what has been done at the bedside while they were pursuing their technical studies at college. It will prove equally interesting, though possibly not so thoroughly instructive, to the older and larger established practitioner of medicine.

The price is \$6.50, Cloth and \$7.50 Half Morocco. W. B. Saunders, Publisher, 925 Walnut Street, Philadelphia Pa.

COCA AND ITS THERAPEUTIC APPLICATION.—This is a beautifully and profusely illustrated and highly entertaining and instructive brochure of seventy-five or eighty pages on this remarkable therapeutic plant illustrating not only the botanical beauty and marvellous anatomical structure of erythroxylon coca from which the popular Vin Mariani is made, but the successive steps toward professional popularity the plant has made, as well as the persistent enterprize of the popular author of this book and of this popular therapeutic wine.

ELECTRO-THERAPEUTICAL PRACTICE, by Chas S. Neiswanger, Ph. G., Prof. Electro-Physics Post Graduate Medical School, Chicago, is intended as a ready reference guide for physicians in the use of electricity. Some of the suggestions therein meet our approval, others are not familiar to us by clinical testing.

The seances recommended for static and faradic electrization are in our judgement generally too lengthy.

Gray on Nervous and Mental Diseases—New (2d) Edition. A Treatise on Nervous and Mental Diseases. By Landon Carter Gray, M.D., Professor of Diseases of the Mind and Nervous System in the New York Polyclinic. New (2d) edition. In one very handsome octavo volume of 728 pages, with 172 engravings and three colored plates. Cloth, \$4.75; leather, \$5.75. Philadelphia. Lea Brothers & Co., Publishers, 1895.

The Biological and Morphological Constitution of Ganglionic Cells, as Influenced by Section of the Spinal Nerve Roots or Spinal Nerves. Essay which has been awarded the prize of the American Neurological Association. B. Onuf (Onufrowicz), M. D., Brooklyn, N. Y.

Poliomyelitis Occuring in an Epidemic Form, followed twelve years later by Progressive Muscular Atrophy and Lateral Sclerosis. By J. T. Eskridge, M. D., Neurologist to the Arapahoe County and St. Luke's Hospitals, Denver, Colo.

Report of one Hundred and Eleven Additional Cases Operated upon with the Anastomosis-Button. By J. B. Murphy, M. D., Chicago. Professor of Clinical Surgery, College of Physicians and Surgeons, etc., Chicago.

Ueber wenig bekannte Reflexerscheinungen bei Nervenkrankheiten und über die diagnostische Bedeutung des sog. Fussphänomens und der Sehnen- und Hautreflexveränderungen. Von Prof. W. v. Bechterew, St. Petersburg.

Extracts from an Introductory Address Delivered at the College of Physicians and Surgeons of Baltimore, September 30, 1895. By Thomas Opie, M. D., Professor of Gynecology, College of Physicians and Surgeons.

The Physiological Action and some Therapeutical Uses of the Cold Bath. By W. H. Riley, M. D., Physician to the Department of Mental and Nervous Diseases in the Sanitarium at Battle Creek, Mich.

Hysteric Blindness and Pseudo-Meningitis, with Report of a Case Treated by Hypnotism. By Hugh T. Patrick, M. D., Professor of Neurology in the Chicago Polyclinic, etc., Chicago.

Transactions of the Eighteenth Annual Meeting of the American Microscopical Society, held at Ithaca, N. Y., August, 21, 22 and 23, 1895. Edited by William C. Krauss, M. D., Secretary.

On the Morbid Heredity and Predisposition to Insanity of the Man of Genius. By Warren L. Babcock, M. D., Assistant Physician, St. Lawrence State Hospital, Ogdensburg, N. Y.

The Importance of Frequent Observations of Temperature in the Diagnosis of Chronic Tuberculosis. (With Illustrative Charts.) By Walter Channing, M. D., Brookline, Mass.

Transactions of the Medical Society, of the State of North Carolina. Forty-Second Annual Meeting, held at Goldsboro, N. C., May 14th, 15th and 16th, 1895.

Paramyoclonus Multiplex. A Clinical Lecture. By F. W. Langdon, M. D., Clinical Professor of Nervous Diseases at Miami Medical College, Cincinnati, Ohio.

Sleep in its Relations to Diseases of the Skin. By L. Duncan Bulkley, A. M., M. D., Physician to the New York Skin and Cancer Hospital, etc., New York.

Commitment of the Insane in the Southern States. By William Francis Drewry, M. D., First Assistant Physician Central State Hospital, Petersburg, Va.

Ueber ein besonderes, intermediäres, in den Pyramidenseitenstrangbahnen befindliches Fasersystem. Von Prof. W. v. Bechterew. St. Petersburg.

Ueber eine durch Verwundung der unteren Abschnitte des verlängerten Markes verursachte Lähmung. Prof. Wl. v. Bechterew. St. Petersburg.

Reflex Epilepsy. By William C. Krauss, M. D., Professor of Nervous Diseases, Medical Department Niagara University, etc., Buffalo, N. Y.

Observations on Mental Affections in Children, and Allied Neuroses. By William W. Ireland, M. D. Edin., Mavisbush House, Polton.

Hypertrophic Rhinitis. By Edward J. Birmingham, A. M., M. D., Surgeon-in Chief to the New York Throat and Nose Hospital.

Irrigation of the Posterior Cerebral Fossa for the Relief of Basilar Meningitis. By J. T. Eskridge, M. D., Denver, Col.

Reflex Neuroses. By James K. King, M. D., Ph. D., Medical Superintendent, Glen Springs Sanitarium, Watkins, N. Y.

Hypnotism; its uses, Abuses, and its Medico-Legal Relations. By William Lee Howard, M. D., Baltimore, Md.

The Motor Mechanism and some of its Diseases. By W. H. Riley, B. S., M. D., Battle Creek, Mich.

A Case of Syringo-Myelia and its Diagnostic Difficulties. Edward C. Runge, M. D., St. Louis, Mo.

An Examination of Weismannism, by George John Romanes, M. A., L. L. D., F. R. S., Cambridge.

The Prevention of Asiatic Cholera. By Elmer Lee, A. M., M. D., Ph. B., Chicago.

Medicine as a Profession. Louis Faugeres Bishop, A. M., M. D., New York.

Lumbar Puncture of the Subarachnoid Space. By George W. Jacoby, M. D.

Primary Lateral Sclerosis. By J. T. Eskridge, M. D., Denver, Colo.

Nephritis of the Newly Born. By A. Jacobi, M. D., New York.

ILEUS. By John B. Murphy, A. M., M. D., Chicago, Ill.

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ORIGINAL CONTRIBUTIONS.

The Anastomoses Between the Spinal Accessory and the Vagus.*

By DRs. D. MIRTO AND E. PUSATERI,

IT is now about twenty-eight years since Burchard (1) published the results of his anatomical investigations on the course of the internal branch of the spinal accessory in the trunk of the vagus. From that time until the present, researches have continued to be made in the subject by physiological methods: such investigations, while bringing to light new and interesting facts, both from an anatomical and a physiological aspect, have not been harmonious in their results, and have not yet received that unquestionable sanction, which only the anatomico-experimental method of secondary degenerations can accord. For this reason it is interesting to return to the subject with new observations, applying more exact processes of technique, and endeavoring, beyond all, to decide whether the internal and external branches of the spinal accessory were respectively of bulbar and of spinal origin, as was first affirmed by Bendz (2), Spence (3) and Cl. Bernard, (4) based on accurate, but not decisive, anatomical dissections.

*Translated from *Rivista di Patologia nervosa e mentale*, by Susanna P. Boyle, M. D., C. M., Professor of Pathology, Ontario Medical College for Women, Toronto, Ontario.

Method.—For our investigations two methods of procedure presented themselves, viz Bischoff's and Bernard's. Bischoff's process consists in first exposing the bulb and then cutting away the roots of origin of the eleventh nerve, while Bernard removes the anastomotic branch of the nerve. We, disagreeing with Burchard, preferred Bischoff's method.

This is very successful in rabbits, whose occipito-atloid interval is very wide, so that the bulb is easily accessible, and there is no necessity for removing a part of the occipital bone.

Our experiments were divided into two series, in order to attain the double end of our investigations. In the first series sections were made of all the branches of the spinal accessory, and in the second set the trunk of the nerve was cut below the point at which the filaments of bulbar origin become incorporated. Here briefly is our *modus operandi*:—

The animal was fixed in such a position that the axis of the head was at right angles to that of the body, and was completely anaesthetized by chloroform. The skin of the neck was shaved, the field of operation thoroughly disinfected and an incision made in the median line, extending 5—6 cm. downward from the external occipital protuberance. There are divided therefore in the median line the insertions of the *Trapezius* and *Splenius*, the underlying muscles are strongly separated and partly detached from their attachment to the occipital protuberance and semi-circular line. Then, with forceps and a pair of curved scissors, are removed the *Recti*, major and minor, and *Obliquus superior*: thus the inferior part of the occipital bone and the jugular membrane are completely exposed to view. Bleeding is stayed, and the part again disinfected. An H-shaped incision is then made in the membrane with a small Graefe knife.

The section of the membrane is one of the most difficult procedures of the second part of the operation, since, if the incision be extended too far externally, the two large internal jugular veins are inevitably severed and fatal haemorrhage ensues. The two edges of the mem-

brane are then retracted by two small hooks which are entrusted to an assistant. The bulb being then exposed it is carefully, slightly, displaced, and there is then seen the spinal accessory in the foramen lacerum posterius. With a very delicate hook the bundles of the bulbar branches of the accessory are carefully raised and cut. The trunk of the spinal accessory is then seized with small forceps and after having been drawn out a little, is cut at its entrance to the foramen, then, with slow and progressive traction, it is withdrawn from the spinal cavity.

In those experiments where we desired to cause a lesion of the bulbar roots of the spinal accessory, the nerve trunk was severed below the point at which the bulbar roots united with it. In this case also the stump of the nerve was extracted gently.

During the period of the operation, a sterilized salt solution (75%) was from time to time allowed to fall on the bulb. The membrane was then sutured, next the muscles of the neck and finally the skin, except at the lower part of the incision where a strip of iodoform gauze was inserted so as to drain off the sero-sanguinolent fluid which collected in the wound. The gauze was kept adherent to the skin by iodoform-collodion. The animal was then untied and placed in a cage where it was kept fasting for twenty-four hours. At the end of that time the gauze was removed and the cutaneous suture completed.

The animals thus operated on were kept alive for fifteen days, when they were bled to death.

At the autopsy in all cases the membrane was found completely cicatrized. The dissection of the nerve-trunks for examination was made with great care so as not to injure them in any way.

For histological examination, we used, with satisfactory results, Marchi's method with Vassale's modifications.

Small pieces of the nerve about 1 cm long were hardened for twelve days in Müller's fluid, and were then placed in the Marchi-Vassale mixture, composed as follows:

Müller's fluid in distilled water 3—1% osmic acid, pure nitric acid—20 drops in 100 ccm of mixture.

After being five days in this solution, the pieces are washed in distilled water, dehydrated in a series of alcohols, embedded in celloidin, and cut in both axes by the microtome. The sections are then dehydrated, cleared in the zylo-phenic solution (3 parts zylo, phenol 2) and mounted in Canada balsam.

The advantages of this process are those which were mentioned by Vassale at the seventh congress of the Italian Phreniatric Society, viz., the non-degenerated fibres do not present the diffuse brown color due to the osmic acid which is given by Marchis method, but keep the pale yellow color given by the bichromate: the degenerated fibres on the other hand are conspicuously stained black: and there are no black drops scattered throughout the preparation, which in Marchi's method sometimes led into error.

These are the results of the histological examination.—

I. *Cervical branches of the pneumogastric.*

(a.) *Pharyngeal branch.* Differing from Longet we found a single pharyngeal branch in our preparations. This was largely degenerated.

(b.) *Superior laryngeal nerve.* Our observations were made on the principal trunk of the laryngeal, on the *external laryngeal*, on the *internal laryngeal*, and on the *depressor nerve of Cyon*. In the trunk of the superior laryngeal we found degenerated fibres in medium quantity, and also in the external laryngeal, which goes, as is known, to supply the crico-thyroid muscle. The internal branch of the superior laryngeal was found intact. The *depressor nerve*, which, in rabbits springs from the superior laryngeal, and sometimes by a second root from the vagus, was found largely degenerated.

(c.) *Inferior laryngeal nerve.* Greatly degenerated. The degeneration extending to the terminal branches and oesophageal fibres.

II. *Thoracic branches of the Pneumogastric.*

(a.) *Cardiac branches.* Five cardiac branches were found in rabbits. One took origin from the *recurrent*, the

other four from the vagus below the origin of the *recurrent*. In all our experiments these nerves were constantly found in great part degenerated.

(b.) *Pulmonary branches.* Showed only a small amount of degeneration.

(c.) *Thoracic trunk of pneumogastric and oesophageal branches.* The results of the histological examination of these nerves were negative.

III. *Abdominal trunk of pneumogastric.*—Our observations were made on both right and left nerves. The result was in all cases entirely negative.

External branch of spinal accessory.—In the experiments in which the trunk of the eleventh was cut, the external branch was found *completely* degenerated: the anastomotic branch and all the branches of the vagus were intact. Besides the histological examination, the trunk of the vagus above the junction of the anastomotic branch of spinal accessory was in every case examined, in order to be sure that none of its branches was involved or had participated in the degenerative process.

Observation. The results of our examinations agree only in part with those of Burchard. We were able to determine the presence of degenerated fibres in the *depressor nerve of Cyon*, in the muscular and pharyngeal branches of the inferior laryngeal, and in the pulmonary branches of the vagus, notwithstanding the distinct origin of the two branches of the spinal accessory. These facts are the more worthy of attention when we consider that our operative methods were much more exact than those of Bernard (whose method Burchard used), for it would seem that in the latter process the mere mechanical act of wrenching away the anastomotic branch, which in rabbits is very short, is sufficient to damage the trunk of the vagus; nor can the anastomotic branch be satisfactorily separated from the vagus and hypoglossal, to which it is connected by a strong connective tissue band. And to this we must add the fact that with such a method the trunk of the vagus is most easily involved in the inflammatory

process which follows the operation. The superiority of the Marchi-Vassale method, therefore, gives an additional value to our investigations.

Our anatomical researches lend support to the results of physiological observations made by Longet, Bischoff, Bernard, Waller, Heidenhain etc., in reference to the pharyngeal, laryngeal and cardiac branches of the vagus.

The presence of degenerate fibres in the trunk of the *depressor nerve of Cyon*, confirms the results of the physiological researches of Spallitta and Consiglio, (6) who maintained that this nerve was formed partly from the vagus and partly from the spinal accessory.

Confirming the theories advanced by Bernard and Chauveau, which were never entirely accepted, we find no degenerated fibres in the abdominal trunk of the pneumogastric. Contrary to the opinion of Waller and Consiglio, we believe that the motor influence of the vagus on the stomach is due to motor fibres in the nerve itself.

The idea of Bischoff, Longet and others that the tenth nerve is exclusively sensory, does not seem capable of being sustained: in fact anatomy has shown that the pneumogastric has a double origin, one motor and one sensory. The motor root is represented by the *nucleus ambiguus*, the sensory by the jugular and plexiform ganglia (Gehuchten).

As to the significance, then, of the internal anastomotic branch of the spinal accessory, we believe we are right in considering it as an *accessory motor bulbar root of the vagus* which has only the accidental relation of contiguity with the external branch of the spinal. In support of this are the following facts:—

1. The internal anastomotic branch is of exclusively bulbar origin.
2. It takes origin in the *nucleus ambiguus* as does the motor root of the vagus.
3. It is possible by careful dissection to separate it from the external branch.

The eleventh cranial nerve, then, in our estimation, is represented exclusively by the external branch which goes to supply the Sterno-cleido-mastoid and Trapezius.

- (1) A. A. Burchard. *Verlauf des accessorius Willisii im vagus.* Dessert. Hale, 1867.
- (2) Bendz. *De connexu inter nerv. vagum et accessorium Willisii.* Dessert. inaug. 1839.
- (3) Spence. *Recherches anat. sur les nerfs pneumogastrique et spinal* (translated in the Annales med-psychol, 1843. p. 48).
- (4) Cl. Bernard. *Recherches experimentales sur les fonctions du nerf spinal etudi specialment dans ses rapports avec le pneumogastrique.* (Archiv. gen de med. 1844).
- (5) Bischoff. *Nervi accessorii Willisii anatomia et physiologia.* Dessert. inaug. Heidelberg 1832.
- (6) Spallitta e Consiglio. *Sulle fibre d'origine del nerv. depressore* (La Sicilia med. anno III, No. 9).

SOME CURRENT ERRORS REGARDING INSANITY.

By ARTHUR E. MINK, M. D.

Professor of Mental and Nervous Diseases. College of Physicians and Surgeons, St. Louis.

FEW subjects have given rise to so many misconceptions, not only amongst the laity but even amongst physicians, as the subject of insanity. The average individual has obtained his knowledge of insanity either from rumor, tradition, newspaper articles or from the romantic and exaggerated accounts found in the pages of the average novel. "Speak of an insane man", says the great alienist Esquirol, "and the laity think of one, whose intellectual and moral faculties are entirely unnatural, perverted or abolished. They think of him as one who judges badly of his external relations, position and state, and who is guilty of '*bizarre*' disordered and violent conduct." The average person pictures an insane man to himself, as a ferocious, frightful looking individual, with glaring, protruding eyeballs and perhaps frothing at the mouth. We well recollect when an asylum physician, how, when one of our harmless, timid terminal dementes escaped, the whole neighborhood was aroused and turned out to capture him as though he were a mad dog. All alienists are aware of the surprise of the average lay visitor to an asylum, to see that the majority of patients are decorous, calm and apparently rational, that they judge well and answer often with intelligence, in fact, that they are like "other folks." Many intelligent physicians have often manifested the same surprise to me and we know that many an asylum physician has in the beginning of his experience, asked

himself this question; Why are so many people in who ought to be out, and so many out who ought to be in? These erroneous ideas are not only prevalent amongst the laity and many physicians, but often lawyers, judges and pseudo-scientific so-called experts, share them, and so we often see ridiculous criteria of sanity or insanity set up, often to the detriment of the patient, his family or the public safety. They ignore the fact that many insane can coordinate their ideas and talk sensibly, that they can uphold their opinions ably and with good logic and can defend their conduct often by reasonable explanations and plausible motives. Many asylum physicians can recall the difficulty they have had in combating the arguments of some insane patients who wish to be discharged or to obtain certain privileges, etc., nevertheless we have heard certain physicians and "alienists" hold, that such and such a person was sane because he conversed well and displayed a certain degree of mental acuteness!

If, in doubtful and criminal cases, more attention were paid to the doer and less to the deed, if the entire life history were considered instead of a chapter, if analysis were followed by synthesis, if it were recognized that we can have insanity without intellectual disturbance, if the personality itself were investigated and not its deceptive exterior, if psychological theories made room for clinical experience, then many misconceptions prevalent at the present time would disappear.

In spite of a mountain of evidence to the contrary, it is still believed by many that lack of motive for committing a crime is an evidence of insanity. This is no criterion at all, for the insane may or may not have a motive. The paranoiac has a morbid motive the result of his counterfeit logic. An alcoholic lunatic's motive is usually due to delusions of conjugal infidelity. In the impulsive or affective insanities such as kleptomania, pyromania, etc., no motive is apparent. The same may be said of the attacks of fear in melancholia and in epileptic insanity as a result of amnesia. When a crime such as murder, for instance, is committed with premeditation, it is popularly supposed to be an evidence

of the sanity of the individual committing it. It however is not, for alienists can give many examples of the insane (especially those manifesting degenerative insanity such as paranoia in its various forms, etc.) who have shown great premeditation in their deeds.

Consciousness of guilt or culpability before the law is generally believed to be a sign of sanity, yet many insane, such as melancholic paranoics, and impulsive lunatics, *et al.*, are aware of their culpability or guilt before the law. Some paranoiacs may believe themselves to be martyrs to unjust laws and glory in their martyrdom, as for instance Guiteau. Others, like melancholics, fear Divine law but not human, and have been known to commit murder in order to be legally executed, instead of committing suicide.

Remorse is generally taken also as an indication of sanity. It also is no criterion, for many insane display remorse for their deeds, such as melancholics, impulsive lunatics, etc.

We have had epileptics apologize to us for their violent conduct during an attack of "*grand mal intellectuel*." Those recovering from an acute attack of alcoholic insanity may show remorse.

Remorse may be due to the deed itself or to the disagreeable results of it. Although amongst many of the insane the physiognomy is peculiar, as in melancholia, violent stages of acute mania, cases of chronic mania, imbecility, etc., much nonsense has been written or spoken in regard to this subject. In regard to paranoiacs for instance, some have gone so far as to speak of paranoical hair and a paranoical moustache. In the writer's experience he has been able to find little that is characteristic of the paranoiacal physiognomy and he believes that if a dozen paranoiacs were mixed with a dozen sane people, it would be extremely hard, if not impossible, to pick them out by facial characteristics alone. Much that has been written about the physiognomy in other forms of insanity is open to the same charge of exaggeration, and the information conveyed by the majority of the pictures found in works on mental medicine, will be

of but slight value in making a diagnosis. The writer has heard it urged by many that the insane have no consciousness of their own alienation or what the Germans term "*Krankheitseinsicht*," it is, however, no uncommon thing to find this consciousness of their own malady amongst the insane. We can often see this in the prodromal period of acute insanities. We have seen a patient with syphilitic insanity laugh sometimes at the absurdity of his own imparative conceptions, and at other times, overwhelmed by their apparent reality. In the impulsive insanities this consciousness is quite characteristic. Pick has shown that, properly speaking, we should speak of a feeling which the insane have of their malady (*krankheitsgefühl*) and of a consciousness of their disease (*krankheitseinsicht*). This is found at times in the early stages of paranoia.

Before we close we cannot help saying a few words in regard to that ready refuge of puzzled alienists in criminal cases; viz., simulation.

Morbid mental phenomena cannot always be classified under this or that head of our highly artificial nomenclature. Let us remember what Krafft-Ebing says: "All of our classifications are dogmatic and owing to the individual variability of these 'diseases of personality', never exhaustive. There are degenerative disease-pictures, especially of hereditary origin, in which the protean-like and unique character of the symptom complex, makes it impossible for them to be included under any scheme of psychological classification. Yet it is most usually criminals whom we may think simulate, that have led just such a burdened degenerative psychical existence. Where degeneration has passed temporarily or permanently into real insanity, there will be no doubt as to irresponsibility and the only danger will be that the '*non-expert expert*' will diagnosticate simulation, from the lucid, protean-like character of the disease picture."

Medical jurisprudence must be emancipated from the trammels and traditions of Roman law and theological prejudice and accept the teachings of psychiatry and criminal

anthropology. Then and not until then will those accused of crime before the law, be judged by more enlightened standards and the difficult question of mental responsibility be viewed in a nobler and better light.

A CASE OF CHRONIC ADULT CHOREA, WITH PATHOLOGICAL CHANGES SIMILAR TO THOSE OF GENERAL PARESIS.*

By E. D. BONDURANT, M. D.,

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THE subjoined case, offering a somewhat unusual combination of clinical symptoms, associate with pathological changes in the central nervous organs very similar to the lesions noted in general paralysis of the insane, would seem to afford additional evidence of an intimate relationship between chronic progressive chorea and certain other neurodegenerative diseases, notably general paresis.

A meagre family history only could be obtained. The patient, a white female, was of the lower class, a native of Alabama. Her father was insane, and had "some kind of nervous trouble" which from the description given of it by one of his relatives, was probably chorea.

Patient from early life was looked upon as dull; she received no education; worked on a farm as a laborer. At the age of seventeen she married, and one year later gave birth to a child, having up to this time evinced no mental disorder which could properly be classed as insanity. She "never seemed the same" after her confinement, there dating from this time a change in disposition, a progressive increase in mental obtuseness, some irritability, a tendency to fits of anger, and some emotional weakness. At the same time peculiar jerky movements of muscles of the face and upper extremities were noticed. These choreiform move-

*Read (by title) at the meeting of the American Neurological Association, at Philadelphia June 3d-5th, 1896.

ments, as well as the mental defects and perversion, grew more marked with the lapse of time; after two or three years, inco-ordinate movements in lower extremities appeared, and gait became unsteady. The mental weakness finally became so pronounced that patient was adjudged insane and sent to the State Hospital. Her general bodily health was reported to have been good.

Six years after the onset of the disease an examination resulted as follows:

Patient is a young woman, aged 24, of large frame, and is well nourished, has a good color, makes no complaint of feeling ill in any way. She wears an expression of stupidity, forehead is low, teeth irregular, ears illshapen, with completely attached lobules; lungs normal; heart: a slightly roughened systole at apex; arteries not tortuous nor sclerosed. Urine: small amount of albumin, trace of indican, some hyaline and nucleated tube casts, with an occasional granular cast. Blood: Haemoglobin percentage 90; number of red corpuscles in cubic millimeter 5,920,000; temperature, pulse and respiration normal.

There are almost constant choreoid movements chiefly affecting the muscles of the face, head, neck and upper extremities, resulting in twitching of the corners of the mouth, grimaces, spasmodic closure and opening of the eyes, twisting of head to one side, nervous, jerky, inco-ordinate movements of fingers and arms. There are also twitchings and spasm of muscles of the lower extremities, although these are, especially when patient is seated, much less noticeable than are the movements in arms and face. None of the movements are great in extent. All of them are more pronounced on left side than on the right. The tongue is protruded straight, but cannot be held out—is jerked suddenly back and teeth snapped together. The movements become more marked when patient is made aware that she is noticed. They cease during sleep; are increased by voluntary movements. In addition to the choreic movements, there is a rhythmic coarse tremor of hands, well marked on left side, scarcely perceptible, although undoubtedly present, on right. At times, especially when she

attempts to walk, or when her attention is concentrated on other matters, there are distinct, worm-like, athetoid movements in hands and fingers, these also best show on left side. Patient is unable to execute any finer movements with fingers, and has difficulty in dressing and in taking her food. She swallows without trouble. When told to walk, she rises from her chair with difficulty, assisting with her hands as far as possible, sways, hesitates, executes a peculiar jumping up and down movement by rising upon her toes, starts forward, takes a few unsteady steps, stops suddenly, sways, rises on her toes two or three times, then goes forward again. Her steps are short and irregular, feet kept wide apart, she catches at the wall, pieces of furniture, or persons who stand near her. Her feet are raised high, heels put down first, and often lifted two or three times before she gets her weight rested steadily upon the limb. Her arms are, when she is not allowed to grasp anything, held in a strained position, show choroid movements, together with the slow athetoid twistings above mentioned. She cannot walk up or down steps. Sometimes falls to the floor.

She stands fairly steady with eyes closed—about as well as with them open. Her muscular strength is much less than normal. Sensation, so far as may be judged from examination of one who is so demented, unimpaired.

Electrical reactions are entirely normal. Patella reflex, both sides, much exaggerated, more so on left, ankle clonus easily elicited, also most pronounced on left, where it will continue for several minutes. Triceps reflex increased, more marked on left side. Superficial reflexes normal. Pupillary reflexes normal. Ocular movements irregular and spasmodic; no nystagmus; spasmodic contractions in orbicularis palpebrarum marked. Vision: slight myopia. Eye grounds normal under ophthalmoscopic examination, except for a small posterior staphyloma, both eyes.

Speech irregular in tone and rhythm, gasping, articulation indistinct, difficult words are slurred, or no attempt is made to pronounce them.

Her mental condition is that of advanced dementia. She replies to most questions in monosyllables. Occasionally stares stupidly, wags her head and says nothing, even when the question is often repeated. Her memory is defective—she does not know her age nor the number of her children; is dull of comprehension, indifferent and careless, but not unclean in personal habits. Delusions cannot be elicited. She is irritable, petulant, easily angered. Is utterly unable to give any intelligible account of her own case, or to return reliable answers to questions asked her.

The condition of the patient remained substantially as above described for three years, the only changes being gradual increase in dementia, in violence of choreic movements, and in the spastic symptoms. She was treated at different times with potassium iodide, arsenic, various tonics, and electricity, equally without good effect. The casts and albumin persisted in her urine, but at no time was there much oedema nor any additional indication of renal inadequacy. Her general bodily state remained good until a few weeks before her death, which occurred nine years after the onset of the chorea, from gangrene of the lung. During the last few days of her life temperature was high, and she suffered from acute diarrhoea. Age at time of death 27.

Post mortem examination, made three hours after death, resulted as follows:

Body well nourished.

Heart: Weight 8 ozs.; small vegetations along edge of one cusp of mitral valve.

Arteries: Small atheromatous patches in first inch of aorta, a small patch here and there in thoracic and abdominal aorta, and a considerable cluster of diseased areas at bifurcation of the abdominal aorta. Veins and small arteries not affected.

Lungs: At apex of left, a small cluster of cheesy nodules. In lower portion of upper lobe of right lung is a cavity two inches in diameter, having ragged greenish walls and emitting a characteristically gangrenous odor. The cavity is surrounded by a zone of consolidation, and the entire lung is well filled with blood.

Kidneys: Both are firm, pale, capsule partially adherent, cortex pale, striae indistinct, pyramids dark red, weight of right three and three-fourths, of left three and one-half ounces.

The lower eighteen inches of ilium, the caecum and the ascending colon show signs of acute inflammation, the mucous membrane being thickened, red, injected, surface dotted with hemorrhagic points. Other organs in abdomen and chest are normal.

The *skull* shows slight asymmetry; the bone is thick, diploe scanty, sutures open, inner surface pale. There is unusually firm adhesion to dura. Beyond this adhesion to calvarium the *dura* shows no abnormality. The *pia-arachnoid* is extremely thick, tough, edematous, opalescent and can without difficulty be removed in large sheets; it adheres to the convolutions here and there over vertex. The blood vessels are injected; the larger arteries show no atheroma nor other disease.

The *brain* weighs thirty-eight ounces immediately after removal and with the pia attached. It does not fill the cavity of the cranium; is shrunken and very firm—almost hard. All of the convolutions over the convexity are atrophied, and the sulci gape; the gray cortex is thinned, and its outer surface is in places irregular. The white substance is hard, puncta vasculosa few; the lateral ventricles are large, ependymal lining granular. The surface of the corpora striata and thalami, where visible, in lateral ventricles, is uneven and sclerotic in feel. The ependymal lining in fourth ventricle is granular. Cerebellum, pons and medulla abnormally firm. The spinal cord is firm; in the fresh specimen pathological changes are not pronounced, but after hardening in Müller's fluid, a degeneration in pyramidal tracts becomes quite evident to the naked eye.

Portions of the fresh tissue from various regions of the cortex cerebri and from pons, medulla and cervical cord were placed in absolute alcohol, cut and strained after the Nissl method, and by carmine. The remainder of the brain and cord was placed in Müller's fluid. Golgi silver preparations of the cortical tissue were subsequently made, and

after several months in Müller, a silver phosphomolybdate stain, as recommended by Berkley, was attempted, but with indifferent success. After hardening in Müller was complete, portions of the cortex, basal ganglia, internal capsule, pons, medulla, cerebellum, and the several regions of the cord, were infiltrated with celloidin, cut and stained by the Weigert method, and by Pal's and Kultschitzky's modifications of the same; and sections also tinged by nuclear stains and by sodium sulphindigotate.

Microscopic study of the tissue resulted as follows:

In the *dura* no characteristic pathological changes were found.

Pia: There is great thickening, most marked in degree over the convexity of brain and reaching its height in motor and nearly adjacent areas; there is a general increase in connective tissue, and a marked round cell infiltration; there are accumulations of round cells near many of the blood vessels, and at the points at which pia adheres to subjacent convolutions. The adventitia of many of the blood vessels is thickened, and in a few of the medium sized arteries there is a thickening of muscular layer as well. At several points small extravasations of blood are noted in meshes of pia. Most of the vessels are well filled. Over the cerebellum the changes in the pia are not well marked, and are also but slightly shown over basal portions of the brain.

Cerebral cortex: The outer surface of the convolutions is in places uneven and irregularly indented, the first or molecular layer being of unequal thickness; the indentations correspond with points of adhesion to pia. The number of connective tissue cells in the first layer is increased. Among the nerve cells of the other layers of the cortex extensive degenerative changes are noted, affecting alike the large and small pyramidal, fusiform and ambiguous cells. The most striking general change is an apparent *leanness*, a shrinking in size, of the cells, pyramidal especially. In Nissl preparations there are noted disappearance of the normal rods and striae of the large cells, increase in pigment and irregularities of staining, some of the nuclei being deeply tinged, some of the cells diffusely stained.

Many of the cell bodies are simple masses of large and small granules deeply stained. Some show vacuoles. A large proportion of the giant cells of Betz are shrunken, more or less distorted and their characteristic chromatin rods are disintegrated into granular masses. Around many of the degenerating nerve cells accumulations of lymphoid or connective tissue cells are seen, here and there a nerve cell being almost obscured by them. Groups of eight to fifteen cells around a small pyramidal cell are not uncommon.

In Golgi silver preparations many of the nerve cells show disintegrative change and irregularities of contour of the cell body, irregular swellings and varicosities of the dendritic processes, with extensive denudation of the lateral gummulae. In silver, as well as in the Nissl preparations, the grouping of scavenger cells about the diseased nerve cells is noted. Throughout all layers of the cortex there is an increase in the number of connective tissue cells. In silver preparations many of the glia cells show very thick, coarse processes, often in relation with a blood vessel or with a diseased nerve cell.

The blood vessels of the cortex show thickening of their walls, adventitia in particular, but here and there involving the middle and inner coats as well; many are tortuous; looped; the perivascular spaces of all are enlarged and aggregations of round cells within the perivascular space are common; round many of the vessels are pigmented masses—haematoxylin granules. Some few of the vascular twigs seem normal.

The changes in the blood vessels and in the cortical cells are more pronounced in motor area than elsewhere; the diseased nerve cells are noticeably grouped together, and it is also observed that these groups of diseased nerve cells often lie adjacent to diseased blood vessels. As is usual, many of the nerve cells are of normal appearance, although in motor area a very considerable proportion present the changes above enumerated.

In Weigert preparations an average number of tangential fibres are stained; many of these show globose

and fusiform swellings, with here and there some apparent disintegration of myelinic sheath. In the motor area there are among the radial fibres, many of the largest variety which show varicosities, fusiform swellings, with here and there the myelin broken up into coarse granules. These changes in the radial fibres are not noted in anything like the same degree in sections from posterior portions of the brain, and from the frontal convolutions, although in these localities occasional varicosities are seen. The simple varicosities are sufficiently frequent in normal nerve fibres, or are produced in manipulation, but the disintegration and marked irregularities in contour noted in some of the radial and tangential fibres of motor convolutions are undoubtedly of a pathological nature.

In the corpora striata and thalami, changes in the nerve cells are not well shown in sections colored with nuclear stains and Weigert haematoxylin. There is the same seeming increase in the connective tissues noted in cortex. Nissl preparations were not made. In Golgi silver preparations the glia cells stain in large numbers and many show the thick processes attached to the blood vessels. In lenticular nucleus there are cells which show some abnormalities—irregularities and breaking down of cell body, with partial destruction of dendritic processes. There is nothing comparable with the degenerative change in cortex, however. The blood vessels in the basal ganglia show the same changes noted in cortex, but to a lesser degree.

The ependymal lining of the fourth and lateral ventricles shows numerous granule-like swellings, nearly homogeneous or containing a few nuclei, covered by the epithelial layer which over some of the little protuberances shows proliferation of its cells.

- In the *cerebellum* comparatively few changes of a pathological nature are discovered by nuclear or Weigert stains. Silver preparations seem to show in some of the dendrons of the large cells varicosities and disappearance of some of the gummules, but as the preparations were of indifferent quality only, too much importance is not to be attached to

the findings. The blood vessels are also for the most part comparatively normal.

In both pons and medulla there is some seeming increase in the connective tissue structures; the blood vessels are tortuous, show dilated perivascular spaces with agglomeration of round cells therein. The cells of the nuclei of the cranial nerves are not markedly affected, save those of the nucleus of the twelfth, in which there is noted a decided increase in fatty pigment, with granular disintegration in some cells.

In Weigert preparations many degenerated nerve fibres are discoverable in the pyramidal tracts of both sides, more noticeable in medulla, but readily distinguished in pons and in crura cerebri.

Spinal cord: The pia is but little altered. Its blood vessels show adventitial thickening. Within the cord the connective tissue trabeculae seem increased in number and thickness, and connective tissue nuclei are numerous.

The nerve cells of the cord are of fairly normal character.

The chiefest and most striking pathological change is degeneration in the pyramidal tracts, both crossed and direct, throughout their extent, well marked on both sides, but somewhat more pronounced on the left in crossed columns. It is estimated that one-third of the fibres at least are destroyed. There are also evidences of degeneration in other portions of the cord, noticeable in the tract of Gowers, where the destruction of nerve fibres is quite considerable. In the anterior root zone, especially its peripheral portions, diseased fibres are noted. The columns of Goll and Burdach seem of normal structure. Sections of the peripheral nerves were not made. Their roots, as seen in sections of the cord, are normal.

CLINICAL SUMMARY:—Chorea, developing at age of eighteen, following child-birth, associated with progressive dementia, athetoid movements of upper extremities and spastic paralysis. Death from gangrene of the lungs at the age of twenty-seven.

PATHOLOGICAL CHANGES: Thickening of pia; disease of the blood vessels of pia, cortex and other portions of the brain; extensive degenerative changes in cortical nerve cells, especially in motor region, and degeneration of pyramidal tracts throughout their extent, with slight degenerative changes in fibres of other portions of the cord.

A NOTE ON THE TREATMENT OF SEXUAL INVERSION.

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In concluding my brief psychological study of sexual inversion, I wish to make a few remarks concerning the general medical aspects of inversion, its prophylaxis and hygiene.

The question of the prevention of homosexuality is a large one, but it is in too vague a position at present to be very profitably discussed. So far as the really congenital invert is concerned, prevention can have but small influence; but, as in a very large proportion of cases there is little obvious congenital element, sound social hygiene should render difficult the acquisition of homosexual perversity. What we need first of all is a much greater degree of sincerity concerning the actual facts. The school is undoubtedly the great breeding-place of artificial homosexuality among the general population—at all events in England. Its influence in this respect may have been over estimated, but it is undoubtedly large. It is very unfortunate that school authorities do their best to ignore and conceal the facts. The time is coming, however, when much greater attention to this matter will be insisted on in physicians and others who have the care of boys in large public and other schools. We cannot allow such persons to be mere instruments in the hands of corporations and individuals who are prepared to sacrifice everything to what is called the "school" or "the prosperity of the school," but which has nothing whatever to do with education or with the welfare of the scholar. While much may be done by physical hygiene and other means to prevent the extension of homo-

sexuality in schools,* it is impossible, even if it were desirable, absolutely to repress the emotional manifestations of sex in either boys or girls who have reached the age of puberty. The only way to render such manifestations wholesome, as well as to prepare for the relationships of later life, is to ensure the adoption, so far as possible, of the methods of co-education of the sexes. This, however, is not the place to insist on the desirability of co-education.[†]

Turning from the prevention of sexual inversion to its medical treatment, so far as I am entitled to any opinion I strongly advocate discrimination, caution and scepticism.[‡] I have little sympathy with those who are prepared to "cure" the invert at any price. Dr. von Schrenck-Notzing, the best known and most successful of these operators, seems to me to serve rather as a warning than as an example. He undertakes even the most pronounced cases of inversion, by courses of treatment lasting more than a year and involving, in at least one case, nearly 150 hypnotic sittings; he prescribes frequent visits to the brothel, previous to which the patient takes large doses of alcohol; by prolonged manipulations a prostitute endeavors to excite erection, a process attended with varying results. It appears that in some cases this course of treatment has been attended by a certain sort of success, to which an unlimited good will on the part of the patient, it is needless to say, has largely contributed. The treatment is, however, usually interrupted by continual back-sliding to homosexual practices, and sometimes, naturally, the cure involves a venereal disorder. The patient is enabled to marry and to bear children; how the children

*In this connection I may refer to the writings of Dr. Clement Dukes, physician to Rugby School, who fully recognizes the risks of school life. There was also an interesting discussion on sexual vice in schools, started by an address by the Rev. J. M. Wilson, head-master of Clifton College, in the *Journal of Education*, 1881-2.

[†]Reference may, however, be made to the fact that those persons who have themselves been co-educated with the opposite sex are almost unanimously in favor of such education. See, for instance, "Will the Co-Educated Co-Educate their Children?" (*Forum*, July, 1894) by Prof. Martha F. Crow, who specially investigated this point. And with regard to the importance of the sexual emotions generally and their training, I may refer to a remarkable book just published by Edward Carpenter, "Love's Coming of Age," Manchester, 1896.

[‡]Reference may be made to the wise and comprehensive conclusions of Moll on this matter in his *Die Conträre Sexualempfindung*.

turn out it is yet too early to say.* Dr. von Schrenck-Notzing may certainly be congratulated on the time, patience and energy which he devotes to his patients. Whether he may be congratulated or the treatment itself, and its results, is less certain. For my own part, I frankly confess that the remedy seems to me worse than the disease. The histories I have recorded in previous articles show that it is not uncommon for even a pronounced invert to be able sometimes to effect coitus. It often becomes easy if at the time he fixes his thoughts on images connected with his own sex. But the perversion remains unaffected; the subject is merely (as one of Moll's inverts expressed it) practising masturbation *per vaginam*. Such treatment is a training in vice, and, as Raffalovich points out, the invert is simply perverted and brought down to the vicious level which necessarily accompanies perversity.†

The sexual invert is specially liable to suffer from a high degree of neurasthenia, often involving much nervous weakness and irritability, loss of self-control and genital hyperesthesia. This is a condition which may be ameliorated, and it may be treated in much the same way as if no inversion existed, by physical and mental tonics, or if necessary sedatives, by regulated gymnastics and out-of-door exercises, and by occupations which employ, without over-exerting the mind. Very great and permanent benefit may be obtained by such a prolonged course of mental and physical hygiene; the associated neurasthenic conditions may be largely removed, with the morbid fears, suspicions and irritabilities that are usually part of neurasthenia, and the invert may be brought into a fairly wholesome and tonic condition of self-control.

The inversion is not thus removed. Before deciding whether it is desirable to attempt so radical a change in the sexual impulse, it is necessary to have full knowledge of the patient and his history. If he is still young, and if the

*See, for instance, Dr. Freiherr von Schrenck-Notzing, *Ein Beitrag zur Aetiologie der Conträren Sexualempfindung*, Vienna, 1895.

†Raffalovich, *Uranisme et Unisexualité*, 1896, p. 16. He remarks that the congenital invert who has never had relations with women, and whose abnormality, to use Krafft-Ebing's distinction, is a perversion and not a perversity, is much less dangerous and apt to seduce others than the more versatile and corrupt person who has known all methods of gratification.

perversion does not appear to be deeply rooted in the organism, it is probable that—provided his own good will is aiding—general hygienic measures together with removal to a favorable environment may gradually lead to the development of the normal sexual impulse. If it fails to do so, it becomes necessary to exercise great caution in recommending stronger methods. A brothel, on which Schrenck-Notzing relies, is scarcely a desirable method of treatment from any point of view; to say no more, it is not calculated to attract an individual who is already inspired with disgust of women regarded as objects of desire. The assistance of an honest woman would be much better therapeutically, but it can very seldom be right and feasible to obtain the help of one who is likely to be successful. Hypnotic suggestion has undoubtedly proved helpful in many hands.

While it is no doubt a duty to aid those who are anxious for aid to get rid of their abnormality, it is not possible to look upon the results of such aid, even if successful, with much satisfaction. Not only is the acquisition of the normal instinct by an invert very much on a level with the acquisition of a vice, but probably it seldom succeeds in eradicating the original inverted instinct. What usually happens is that the person becomes capable of experiencing both impulses, not a specially satisfactory state of things.

Moreover, it is often not difficult to prematurely persuade an invert that his condition is changed; his health is perhaps improving, and if he experiences some slight attraction to a person of the opposite sex he hastily assumes that a deep and permanent change has occurred. This may be disastrous, especially if it leads to marriage, as it may do in an inverted man or still more easily in an inverted woman. The apparent change does not turn out to be deep and the invert's position is more unfortunate than his original position, both for himself and for his wife.*

*I have recently been told, by a distinguished physician who was consulted in the case of a congenital invert, highly placed in the English government service, who lately married in the hope of escaping his perversion, and was not even able to consummate the marriage. It is needless to insist on the misery which is created in such cases.

Nor is it possible to view with satisfaction the prospects of inverters begetting or bearing children. Often, no doubt, the children turn out fairly well, but for the most part they bear witness that they belong to a neurotic and failing stock. Sometimes, indeed, the tendency to sexual inversion in eccentric and neurotic families seems merely to be Nature's merciful method of winding up a concern which, from her point of view, has ceased to be profitable.

We can seldom, therefore, safely congratulate ourselves on the success of any "cure" of inversion. The success is unlikely to be either permanent or complete, in the case of a decided invert; and in the most successful cases we have simply put into the invert's hands a power of reproduction which it is undesirable he should possess. The most satisfactory result is probably obtained when it is possible by direct and indirect methods to reduce the sexual hyperesthesia which usually exists when the medical treatment of inversion comes into question, and by psychic methods to refine and spiritualize the inverted impulse, so that the invert's natural perversion may not become a cause of acquired perversity in others. The invert is not only the victim of his own abnormal obsession; he is the victim of social hostility. We must seek to distinguish the part in his sufferings due to these two causes. When I review the cases I have brought forward and the mental history of inverters I have known, I am inclined to say that if we can enable an invert to be healthy, self-restrained and self-respecting we have often done better than to convert him into the mere feeble simulacrum of a normal man. An appeal to the *paiderastia* of the best Greek days, and the dignity, temperance, even chastity, which it involved will sometimes find a ready response in the emotional, enthusiastic nature of the congenital invert. The "manly love" celebrated by Walt Whitman in "*Leaves of Grass*," although it may be of more doubtful value for general use, furnishes a wholesome and robust ideal to the invert who is insensitive to normal heterosexual ideals. It is by some such methods of self-treatment as this that most of the more highly intelligent persons whose histories I have already briefly recorded have

at last slowly and instinctively reached a condition of relative health and peace, both physical and moral. This method of self-restraint and self-culture, without self-repression, seems to be the most rational method of dealing with sexual inversion when that condition is really organic and deep-rooted. It is better that a man should be enabled to make the best of his own strong natural instincts, with all their disadvantages, than that he should be unsexed and perverted, crushed into a position which he has no natural aptitude to occupy. What good work in the world the inverted may do is shown by the historical examples of distinguished inverters; and while it is certainly true that these considerations apply chiefly to the finer grained natures, the histories I have brought together suffice to show that such natures constitute a considerable proportion of inverters. The helplessly gross sexual appetite cannot thus be influenced; but that remains true whether the appetite is homosexual or heterosexual, and nothing is gained by enabling it to feed on women as well as on men.

It can scarcely be said that the attitude of society is favorable to the invert's attainment of a fairly sane and well balanced attitude. This is, indeed, one of the great difficulties in his way that causes him to waver between extremes of melancholia and egotistic exaltation. This is well brought out in a vigorous document by a very able writer, which I may here publish:

"In this case the strength of sin is the law. No passion, however natural, which is scouted, despised, tabooed, banned, punished, relegated to holes and corners, execrated as abominable and unmentionable, can be expected to show its good side to the world. The sense of sin and crime and danger, the humiliation and repression and distress to which the unfortunate Pariahs of abnormal sexuality are daily and hourly exposed—and nobody but such a Pariah can comprehend what these are—inevitably deteriorate the best and noblest element in their emotion. It has been, I may truly say, the greatest sorrow of my life to watch the gradual dwindling and decay of emotions which started so purely and ideally, as well as passionately, for persons of my own sex in boyhood, to watch within myself, I repeat, the slow corrosion and corruption of a sentiment which might have

been raised, under happier conditions, to such spiritual heights of love and devotion as chivalry is fabled to have reached—and at the same time to have been continually tormented by desires which no efforts would annihilate, which never slumbered except during weeks of life-threatening illness, and which, instead of improving in quality with age, have tended to become coarser and more contented with a trivial satisfaction. Give abnormal love the same chance as normal love, subject it to the wholesome control of public opinion, allow it to enjoy self-respect, draw it from dark places into the light of day, strike off its chains and make it free—and I am confident that it will develop analogous virtues, chequered of course by analogous vices, to those with which we are familiar in the mutual love of male and female. The slave has of necessity a slavish soul. The only way to elevate is to emancipate him. There is nothing more degrading to humanity in sexual acts performed between a man and a man than in similar acts performed between a man and a woman. In a certain sense all sex has an element which stirs repulsion in our finer nature. The high gods have

‘Strewed one marriage bed with tears and fire,
‘For extreme loathing and supreme desire.’

“Nor would it be easy to maintain that the English curate begetting his fourteenth baby on the body of a worn-out wife is a more elevating object of mental contemplation than Harmodius in the embraces of his friend Aristogiton—that a young man sleeping with a prostitute picked up in the Haymarket is cleaner than his brother sleeping with a soldier picked up in the Park.”

That is a statement of the matter as it appears to the most fortunate and the most successful of these pariahs. The case of most is far worse. While many become brutalized by this antagonism, the abject prey of their perverted instincts. The passage just quoted, however, by no means expresses the feelings of all inverts. It may be well here to quote Mr. Raffalovich who writes with a full knowledge of this subject:

“I do not believe that inverts are so much to be pitied as Kraft-Ebing thinks; if they are superior inverts they only suffer what superior men always suffer; the struggle between conscience, desire, prudence and the world is not worse for the superior invert than for the superior heterosexual man.

Their inversion has never prevented the great inverters from being themselves, and doing their work in the world. Do you think that Plato, Walt Whitman, Michael Angelo, the great Conde, Winkelmann, and the legion of others had the right or the wish to complain of their homosexuality? * * * As to ordinary and abject inverters, they do not think themselves more to be pitied than men who are drunkards by taste or by habit."*

It is necessary to give full weight to these aspects of the matter in coming to any decision regarding the treatment of any particular case of inversion. The physician's task, rightly considered, is not that of merely enabling an invert to commit masturbation *per vaginam*. His task is more difficult and more complex, and can only be determined by a full consideration of each case, as it arises. Before sexual practices can wisely be changed, sexual ideals must be changed. To attempt to force an invert into connection with a woman before making the feminine ideal desirable to him should be considered a gross and discreditable failure of psychological insight.

*Uranisme, p. 91.

THE ADVANCEMENT OF PSYCHIATRY IN AMERICA AND THE RELATION OF PSYCHIATRY TO GENERAL MEDICINE.*

By EDWARD COWLES, M. D.,

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THE position of the alienist in his relation to general medicine has a most interesting history. He was in the beginning of the modern science of mental medicine, a hundred years ago, always a general physician; it is really true that he has been so ever since. Surgery, long set apart as a somewhat special department of medical science, has a comparatively limited field. An eminent surgical writer[†] says that "the charm of surgery is because it is visible, and tangible, and demonstrable;" its brilliant modern triumphs make it most attractive. With its "external pathology" it is "still to some degree uncertain, but not nearly as much as medicine." "I think," he says, "there is no doubt that medicine requires a higher grade of intellect and more judgement than the practice of surgery." Most of the modern specialties, so called, are subdivisions, and sometimes refinements, of surgery in their methods of examination and treatment. Psychiatry, however, so far as it is a specialty, is closely allied to general medicine; it finds its etiology in all bodily diseases. There has been a mistaken tendency on the part of ourselves and others to include psychiatry wholly in the new science of neurology.

*Abstract of address read at the Annual Meeting of the American Medico-Psychological Association, Denver, Col., June 11th, 1895.

†Cheever, "Lectures on Surgery." p. 2.

The alienist, it is true, has to do directly with mental symptoms, disorders of brain function, and, therefore, of the nervous system, and this goes to all parts of the body. But it is the same for the general physician; he deals commonly with mental symptoms in all forms of febrile delirium, for example, and is more or less of a practical psychologist in the whole range of his art. The alienist, as a psychologist, is a general physician who is a student of neurology, and uses its anatomy and physiology; but he does a great deal more, for he must include all the bodily organs. He must study all the functions of nutrition and excretion. He is being aided by the more promising contributions from organic chemistry; and bacteriology, in the wonderful advancement it is bringing to the whole science of medicine, is explaining the analogy between the toxic influences produced without our bodies and those within them. Not only do bacterial products poison us, but those of our own vital processes that are toxic in conditions of disordered function and in disease, are also the more or less direct causes of mental symptoms. Thus it is that psychiatry is shown, more than ever before, to be dependent upon general medicine. The best definition of insanity is that it is a symptom of bodily disease; in its initial, acute, and curable forms it is a condition due to nutritional changes until consequent damage accrues to the nervous system and the mental organ itself. It is later that we reach the pathology of the neurologist, for in the order of the symptomatology of nervous lesions the general physician and the alienist come first, when the causes are not traumatic, or other forms of surgical disease.

Neurology, in the practice of the modern specialist, had at first a comparatively limited field. Among the newest of the special branches of medicine, its achievements have been brilliant. One of the earliest of these, which, in this country, had so great an influence in establishing neurology on its present basis as a clinical science, was the remarkable study in the wards of the military hospital of the effects

of nerve injuries caused by gunshot wounds observed in soldiers of our Civil War.*

The methods of neurology have been distinctly anatomical, and the force of its scientific research has been largely directed to the localization of the lesions of the nervous system by carefully comparing observed symptoms with pathological findings. These methods have yielded such exactness of results in diagnosis, that like precision has been demanded in all lines of clinical inquiry relating to the nervous system and assumed to be neurological. Out of this there grew the disposition to reproach the alienist, as if he held only a limited place in neurology, for not having demonstrated to an equal degree pathological findings to account for all morbid mental phenomena. With the reinforcement of the early promises of the new experimental psychology, which first addressed itself to the more mechanical lines of inquiry, it became still more the fashion, a few years ago, to regard the alienist as a specialist in neurology and nothing more. Psychiatry has been charged with being slow in its progress, as having no coherent principles, resting upon an indeterminate basis in anatomy, physiology, or pathology, and, therefore, as being unscientific in its classification and therapeutics. But Krafft-Ebing, in noting this fact, claims the establishment of "Psychiatry as a Clinical Science," and says that the results offered by pathological anatomy are for the most part negative, and the few positive ones not surely indicative of their genesis, and worthless for the explanation of the disturbance of function known to have existed. Then psychiatry, he says, seems almost exclusively dependent on itself, and is limited to the direct observation of psycho-pathological phenomena, and from the empirical valuation of these is obliged to draw conclusions as to the kind and degree of the functional disturbance of the psychical organ. These psychopathic phenomena are however, no mathematical quantities, no physical phenomena, nor even chemical secretions, but are phenomena of a peculiar kind, being the so-called feelings,

*Mitchell, Morehouse and Keen, 1864; and S. Weir Mitchell, "Injuries of Nerves and their Consequences," 1872.

ideas, and will-impulses. The course of the psychoses are discovered through observation as in any other disease. Psychiatry, now raised to the value of a clinical science, must be studied by its own methods. He says, "it is more than a specialty, and a necessary complement of medical study, inasmuch as man is not simply an eating, breathing and feeling machine, but a spiritual personality, whose psychical functions are intimately bound up with his somatic, morbid processes."*

An American philosopher† shows that "each of the real and concrete forms of existence which are known to man, boundless as their number and variety may appear, falls nevertheless under one or another of three great types of real being, viz., the machine, the organism and the person." The surgical specialists and the neurologists have been mainly studying the human being as a self-making and self-working natural machine. These specialists have called to their aid anatomy, physiology and pathology in their examinations of the organism which, when out of order, they try to mend. The general physician must go farther in his dealings with the organism while using the same aids; he finds that in treating the disorders of the personal man, he has constantly to reckon with him as also a rational being, whose organic machine is his instrument; and so far every such physician is a practical psychologist. But the alienist as a general physician is especially concerned, in his wider field, with the whole man, for psychiatry deals with the mind of the man and must seek for causes of its disorders in the whole man.

I have said that the methods and field of neurology in medicine have been distinctly anatomical. It is another of the interesting signs of progress in our whole science that the neurologists are finding the need of psychology to explain their problems, and are being led thereby into a better comprehension of psychiatry. In any assemblage of "neurological" papers it is now noteworthy that while the major part of their titles have an anatomical or surgical bearing, a

*Wiener Klinische Wochenschrift, October 24th, 1889.

†Abbot, "The Way Out of Agnosticism," p. 54.

fair proportion will be upon mental subjects. While many of the writers are alienists, yet there have been neurologists who, from the beginnings of their science, have recognized the presence of the psychical element, though much as the general physician has done. The importance of this element as modifying and even causing nervous symptoms is now being more correctly estimated. No more significant indication can be noted as an example than the clearer recognition, within a very few years, of the true nature of hysteria and its alliance with neurasthenia, through the remarkable elucidations of Charcot and his school, and by Loewenfield, Pierre Janet and others. Great difficulties are being solved by the growing knowledge of the fact that underlying all nervous and mental phenomena there is a range of subtle changes in the conditions of the organism that are common ground for the alienist and neurologist. The bond between them may prove to be the still newer science of physiological psychology, wherein may be found a rational basis for an understanding of the relatively intangible mental observations and the beginnings of the grosser changes whose study has given a marked character to the work of the neurologists. The importance of this is shown in the broadening of the view of neurasthenia as being, in certain forms, either a disease by itself, a condition underlying many other nervous diseases, or the true characterization of a chronic condition, whether acquired or hereditary.

We read in the writings of eminent neurologists, discussions of such subjects as "Association Neuroses; Neurasthenia and Allied Forms of Neuro-mimesis," by Prince,* and "Remarks on the Psychical Treatment of Neurasthenia," by Putnam.† The work of Bouchard and others in pathological chemistry, and the revelations of bacteriology concerning the effects of infectious and toxic influences, have made contributions to general medicine that have been applied by the French alienists to the study of insanity. Our American neurologist, Mills, has written on "The

*Jour. of Nerv. and Ment. Diseases. May, 1891.

†Bost. Med. and Surg. Jour. May, 1895.

Relation of Mental Disorders to Infectious Disease,"* and Putnam,† on "The Relation of Infectious Diseases to Diseases of the Nervous System."

When Van Deusen, in 1868, published his ideas of neurasthenia in advance of Beard, he had a much broader and truer conception of the conditions that underlie mental as well as nervous diseases. It is the alienists who have developed this conception, and who have brought out the present understanding of the relation of chemical and toxic processes to mental diseases. In a recent address on the "Causation of Nervous Disease,"‡ by Starr, are summed up the results of our present knowledge of the changes in the chemical and physical condition of the neuron, showing that the essential lesion in functional and organic diseases may be produced by overwork, by imperfect nutrition, or by active poisoning, from active toxic agents produced within the body, or from those of an organic or inorganic type received from without. Thus has general medicine contributed both to neurology and psychiatry, through the principles discovered by bacteriology, an explanation of clinical phenomena long recognized by alienists who first anticipated the true conception of mental disorders as finding their most prolific cause in conditions of nervous fatigue and exhaustion.

These are valuable essays in the domain of psychopathology or in close relation to it; but psychiatry has much to give to, as well as to take from, neurological medicine. It should be kept in mind that if psychiatry is neurology it embraces a far wider range of disordered conditions from diseases of the body than are noted in the manuals of nervous diseases, although these, latterly, enumerate and treat upon, though meagerly, the diseases of the mind. But neurology, although still notably deficient in therapeutics, demands of psychiatry a greater ratio of "recoveries" from insanity than has been shown, apparently forgetful that a large proportion of the patients who have other diseases

*Am. Jour. Med. Sci. 1894.

†Am. Jour. Med. Sci. 1895.

‡Western Reserve Med. Jour. May, 1895.

never get quite well at the best, and still may return to their homes and business, as the uncured insane can not do.

The question of the large contributions that may be made by neurological medicine to psychiatry is one that will bear examination. The advances in histology are so marvelous and rapid that the student of five years ago must now recast his knowledge and conceptions of the physiology and pathology of the nervous system. The alienist has his aid direct from this new knowledge, but welcomes eagerly the "deductions" of all careful observers. But if such deductions from anatomical neurology sometimes take the form of authoritative and instructive dicta, concerning, for example, "the effects due to an exaggeration of the unknown ganglionic or other alterations, without demonstrable lesion," we may be pardoned if we do not take for guides our most agreeable counselors and friends.

In the relation of psychiatry to other departments of medicine the alienist has had to encounter the criticism that he has not been productive of scientific work. We have seen that in its very nature it has not, even yet, the objective character in its pathology that makes it demonstrable by mechanical methods. In the work of the alienist the century has been an age of construction—of laying foundations and building shelters, and thus largely of providing for the more material care of the insane. The problems of this kind to be solved have been difficult and often overwhelming. That the work has been done by medical men better than it could have been done by anybody else is beyond question. If, in their annual reports, the record of their labors is read in an appreciative spirit, one could not fail to be moved to sympathy by the pathetic history. As an example of this I had recently the privilege of hearing an account, written by Dr. Babcock of the South Carolina Asylum, of the efforts made in the last forty years to provide for the colored insane. It was the work of men among whose names are those of Stribling of Virginia, Green of Georgia, Tyler of South Carolina, and Compton of Mississippi. The mention of them awakens memories of a generation at once honored and honoring that has now

passed away. The humane purpose that was sustained through years of discouragement, and the arguments presented in appeals to legislatures, too often futile, betray a degree of foresight, wisdom, and devotion that commands respect. These were scientific labors in the worthiest of the professional and social obligations of enlightened men. In these and kindred efforts the experienced alienists have become conservative as well as painstaking; no brilliant discovery is possible for them, to inspire their zeal with an exhilarating freshness, and they have long been learning to refrain from the voluminous publication of conjectures and deductions concerning the unknown and undemonstrable. There is something to be said also of the perennial proneness of us all to regard everything foreign "*pro magnifico.*" When we are asked why the results of the new science of physiological psychology are not being applied to the elucidation of psychiatry in this country, the following abstract of recent comments, by a German writer,* is a sufficient answer.

Very few alienists in any country have gone carefully into the question of experimental psychology or have made experiments themselves. Buccola, in Italy, more than a decade ago, attempted to apply the psychological measuring of reaction time to pathological cases; but, owing to his early death, this and the work of a few followers soon stopped. Later some Russian psychiatrists, partly influenced by Wundt, attempted the experimental investigation of pathological mental conditions; and quite recently, in America, the attention of some of the younger psychiatrists is awakened to the new psychological methods. But up to the present day, Kraepelin is the only German alienist who has attempted to study the particulars of psychological experiments, by working himself in a laboratory. It is very significant that, in this unique instance, Kraepelin, whose training was with Wundt, has felt compelled to spend some years of preparation in devising special psychological methods

*Kraepelin: *Der psychologische Versuch in der Psychiatrie. Psychologische Arbeiten*
Leipzig. 1895.

before any could be made applicable to the peculiar psychical processes of the insane.

That there is something to come out of this pathological mystery is not to be doubted. Kraepelin, with his pains-taking caution, is bringing out promising indications for the better estimation of mental symptoms by their analysis upon a psychological bases, through the application of certain methods entirely new with him. His fine elucidations of the "exhaustion psychoses" represent, however, the results of a kind of clinical study to which contemporary workers in other countries have addressed themselves; and there have been those who, within the last decade, have initiated laboratory work upon like problems in different ways. To demand results at this stage of progress is calling for the fruit of the tree before it is grown. Neither are we without the promise of scientific advancement in the direction of "pathological findings," in the work of members of our association of alienists. The difficult character of our problems forbids any trivial treatment of the labors bestowed upon them, and certainly exuberance of critical judgment is untimely now that the trend of inquiry has changed so much the data of general medicine, in which the alienists have always found their rightful field. In common fairness the question should first be answered: For what sources, other than the alienists and their hospitals, have come any real contributions to the study of mental disorders in relation to their physical causes?

It should not fail to be mentioned here that there is a most encouraging indication in the work of our hospitals, which allies it with the methods of the general hospitals. Ten years ago there were only two organized schools, then newly established, for the training of nurses in hospitals for the insane. In 1892 there were twenty-four such schools in operation in this country. This year there are thirty-eight of these schools in American hospitals, that have yielded a total of 896 nurses, including men and women, qualified by being instructed in their special work. In a number of other hospitals the establishment of the new system in the nursing service is already begun.

Considering the opposition to this movement in certain quarters, the difficulties in others, and the remarkable failure in some instances to recognize the absolute need of training and experience in such general nursing as may be required in asylums as the first principle of success, it leaves little room for complaint that advancement is not being made in this important particular.

This discussion of the advancement of psychiatry has been limited, so far, to a study of our present "foundations." In pursuance of my argument I have endeavored only to characterize, in general terms, the way in which we are really trying to do our work,—the plan upon which we must expect to build. In the first place we have our hospitals as they are; let us do the best we can with them. It is a maxim in the conduct of hospitals that a bad hospital can be made a good one by good keeping. To men who have learned the business of keeping a hospital, and practiced the art of conducting an institution that should be well organized if business success is to be hoped for, there is no need of assuming to give instruction. The problems relating to hospital economies, the material comfort of the patients, and the curative effects of occupation, etc., are all familiar to you. I may be allowed, however, to say a few words in regard to an ideal hospital organization with respect to its clinical and scientific work. If one were an autocrat, and such a thing were conceivable as being the controlling adviser of a hospital corporation, board of governors, and all concerned, it is easy to say what one should do. My ideal hospital should have the best executive and medical staff that the purse could support, of which I held the strings. The principles should be that no part of the investment in a business is so profitable as that which procures educated and skillful direction. The chief executive should be a man trained to his business and of proven capacity for that particular business, so that with proper assistance his purely executive duties should be to him simply incidental to the use of the hospital as an instrument applied to its intended purpose. The business office of the hospital should be in charge of a competent man, who, as a clerk and cashier of

the hospital, with proper assistance in the bookkeeping, would act as "adjutant" to the superintendent; as such he would prepare and coördinate all the executive office details, but have no executive authority himself. The present office of steward should become that of a purveyor, who, as "commissary" and "quartermaster," would be the buyer of supplies as for a commercial house; he would have charge of these and the oversight of the farm, etc., but he should have no handling of money or keeping of the financial accounts, which belong to the treasurer's office. Then the maintaining of all proper checks upon the purely business operations would be done by the "adjutant," for the superintendent, who could keep himself duly informed without the routine labor of applying the checks himself, as he may do, however, at will. The superintendent should be well educated in general medicine, so that the medical government of the hospital, and the "mental government" of all within it, should have a basis of the broadest understanding.

The clinical assistants should have perfected their education by hospital training or successful practice in general medicine; and they shall be chosen by the superintendent by nomination to the governing board, and he should be responsible for their efficiency. The senior officer should systematically share in the "medical government" of the hospital in all particulars for the sake of perfecting his training. There should be a woman for an assistant physician in a large hospital, or a consultant in gynecology, and consultants in other specialties, to be called when needful, as the physician calls them in general practice. There should be an accomplished resident neurologist on the staff, or a physician especially educated in neurology—not for a chief of staff, because his views would need the broadening and adjusting that would mutually come by contact with the physician's of the staff experienced in general medicine, and by the discussion of clinical problems in the regular meetings of the hospital medical society. Thus I should expect all of the medical staff to become, by and by, practical neurologists as well as psychiatrists. Later, in the natural evolution of things, there might be a

neurologist for chief executive, when he had learned also the incidental business of management; he would have become, by that time, also a general physician, as an indispensable requisite, and as a practical result of medical work so conducted. The newly appointed neurologist should have some clinical duties, even though limited, from the first, if in no other way, at least by taking the places of the regular clinical assistants in a system of giving "a day off" to each every other week. Such an organization provides for an effective division of labor that relieves the clinical assistants from the routine of keeping case records, etc., which may be better done by those whose time is less valuable. Thus, more attention can be given by them to the patients themselves, and to the important necessity of keeping informed in the literature of the subject.

The laboratory should be in charge of the neurological assistant, because he is supposed to be well informed in nervous pathology. But the pathological work should be conducted on the principle that the pathology in insanity begins before the insanity does, and that post-mortem pathology includes but a small, though essential, part of the requirements. Therefore, the laboratory should be a place for the study of physiological psychology. This would cover the study of the initial conditions which lead to mental disorder, and promote the possible determination of the nature and causes of departures from normal mental function. Moreover, in the dependence of their changes upon general physiological processes, and in order to take into account all the elements of vital activity involved, it would be supremely necessary to study both physiological and pathological chemistry in their direct and indirect relations to mental changes. This includes the effects of fatigue and its relation to exhaustion and auto-intoxication. For these reasons it would be desirable that the director of the laboratory should have an assistant especially accomplished in chemistry. There should be, as in general hospitals, a service of mental internes, or clinical clerks, as junior assistants, who should write the records of cases, etc.; their business being the study of medicine, it would bring

in the principle that, in their instruction, he who teaches learns. I would make all the medical staff teachers in some way; the training of nurses helps to do that. Then there should be a school, the teaching in which can be well done and still become so far incidental to the general duties as to add little to the labors of the staff. Such a school can be so conducted as to affect little the cost of the nursing service; in fact the law of compensation works in all these matters. It is a matter of the organization of a business; whatever is good to do, is good all round—every good thing helps every other good thing, and the sum total is the greatest good. The success of such a business is a medical success, and the accomplishment of the results attainable in any large hospital by a well-sustained medical government is a success worthy, in the highest degree, of a physician.

My thesis is that the advancement of psychiatry in America must start from sound foundations; it is the chief business of our lives, and its conditions may be summed up in the following propositions:

1. Our hospitals should be conducted under medical government, as they are instituted for a medical business. They should be conducted by their governing authorities in such a way as to promote the professional efficiency of the medical executive staff; this implies the choice of such officers solely for their fitness, and that fitness is enhanced by experience, which goes with the stability of their work. It implies also a liberal equipment of the literature and appliances which are the well-recognized essentials of scientific professional work everywhere. The manner of life of these officers should put them on an equal plane as to compensation, with successful men of like capacity and attainments engaged in other branches of medicine.

2. The tendency in all departments of medicine and surgery has been toward limitation in specialties; this should be counteracted in our work in all possible ways that promote the broadening of the fitness of medical officers by affording better conditions for their education, and by encouraging special neurological and psychological studies. Thus there should be a close union with all that pertains to

neurology, and then advancement should be sought along the lines of a common alliance with general medicine under the law which Herbert Spencer calls the tendency to integration of all the present specialties in medical science. It is this tendency that, notably at the present time, is being strongly reinforced by the great developments of biology.

3. While it should be our aim to be general physicians in order that we may draw our aid from the whole domain of our science in our somewhat special work, we should draw also upon the newest knowledge of psychology. Thus our special mission becomes the study of the highest and the most difficult problems of human life in the preservation and restoration of mental health, and the sanity of that life.

ABUSE OF THE BROMIDES.*

By HARRIET C. B. ALEXANDER, B. A., M. D., Chicago.

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DR. S. Weir Mitchell in a recent paper before the Association of American Physicians remarks, that the bromides, especially in excess, often produce very peculiar results, and the symptoms, for the alleviation of which the drug was taken, often became much worse under its use, especially during menstruation. It caused delusions, suicidal tendencies, etc. Irritability of temper is a frequent result of the use of bromides but serious effects are more rare. It has some effect on the urine. In chronic cardiac asthenia symptoms grow worse under the bromides. A tendency to ptosis is a common sequence. He had seen the bromides produce paresis and inability to walk, sometimes more marked on one side of the body than the other, simulating hemiplegia. In this it resembles the well known effect of alcohol where a man appears more drunk on one side. The bromides led to failure of memory, going on to partial paresis and involuntary movements of the bowels and bladder. These extreme cases were rarely seen but the reckless use of bromides by laymen might cause them. He recalled a case of Jacksonian epilepsy where a drachm of potassium bromide a day was given. The child's father was a druggist and he urged that if a drachm kept the disease in check, two or three drachms ought to cure it. The child sank after taking the larger dose and became an imbecile. Improvement took place when the bromide was withdrawn and her mind became sharper. Two other children in the hospital were taking lithium bromide, one

*Read by title before the Chicago Academy of Medicine, June, 1896.

lost all memory of words while the other lost all idea of time. A lady had been taking 60 grains of bromide daily for four years. Suicidal tendencies and melancholia occurred at the menstrual epochs which disappeared when the bromides were withdrawn and reappeared when she resumed their use a few years afterward. He strongly inveighed against deluging patients with bromides especially in cases of epilepsy.

In the discussion, Dr. H. A. Hare said that potassium salts produced a very depressing effect on the heart and respiration. He recalled a case where the patient was thrown into a state of collapse from potassium citrate and not until the potassium was stopped did recovery take place. It was a question whether the depressing effect attributed to potassium bromide were not due as much to the potassium base as to the bromide. Of course where the soda or lithium salts were used as in some of Dr. Mitchell's cases the bad effect could only be attributed to the bromine. He did not think that the profession in general recognized the fact that they could get these depressing effects from the potassium salts and that hence they should use sodium instead of potassium. He had found lithium salts more irritating to the stomach than either sodium or potassium. Caffeine was just as dangerous and its effects were known as caffeine craziness. He knew of several cases where 15 grains of caffeine citrate every three or four hours had produced suicidal tendencies. One patient committed suicide by jumping out of the window.

Dr. Janeway had seen a number of deaths which could only be explained by the inordinate use of bromide. These patients would sink into a condition of apathy from which they could not be aroused. He had seen three autopsies and had knowledge of five cases in which the excessive use of bromide had produced fatal results. Another drug in the same category was bromo-soda which drunkards made use of when they wanted to reform. It was just in those cases of cardiac depression that the bromides were most dangerous. The same depressing effects were noted from the drug in asthenic diseases where morbid con-

ditions, frequently attributed to the disease, were really due to bromides, chloral, etc. Even moderate doses might produce these results in susceptible persons.*

Dr. Lyman of Chicago said one point of interest in this connection was the question of heredity. Where there was any hereditary predisposition to insanity or the arthritic diathesis, bromide might develop this condition. In one of Dr. Mitchell's cases arthritis was present. Dr. Hare's remarks about potassium should also be borne in mind. Heart weakness was a condition which might lead to mental depression. He had not used potassium for several years his preference being sodium.

Dr. C. L. Dana of New York did not think that potassium had anything to do with the depressing effects caused by potassium bromide. He had never been able to see much difference in the depression whether patients got potassium or sodium. This was a sort of bugaboo which ought to be banished. He agreed with Dr. Mitchell as to the pernicious mental effect of the bromides. There was another side which should not be over-looked; while they had a depressing effect in large doses, in doses of three or four grains they were of benefit. He had never seen a fatal case except one treated by a homeopathist.

This discussion singularly well illustrates the tendency of some American physicians to ignore American contributions to medical science. Dr. Mitchell sometime ago made a severe unjustifiable attack on American physicians to insane hospitals for their alleged lack of contributions to the literature of psychiatry. Why Dr. Mitchell made this attack is evident from the way in which he ignores the copious contributions of American alienists to this very subject.†

Half a decade ago I pointed out‡ that quite nearly a quarter of a century previous Dr. W. A. Hammond had called attention§ to a phenomenon since frequently

* Amer. Medico-Surg. Bulletin, May 16, 1896.

† University Medical Magazine June, 1896.

‡ Rev. of Nerv. and Ment. Dis. Vol. I.

§ Jour. of Psychological Medicine 1868.

observed yet quite generally ignored. He found that the convulsions of a traumatic epileptic were replaced by furor under the use of the bromides. Nearly coincident with Dr. Hammond, Drs. Voisin and Stark* reported several cases. Dr. Stark thought that this was due to the suppression of the convulsions rather than to any untoward effect of the bromides.

The subject appears from the first to have received most attention in America, for thirteen years later Dr. H. M. Bannister † of Chicago called attention to the same fact. He reported three cases:

Case I was that of a powerful good humored man liable to frequent attacks of grand mal. He was usually mild and good humored, even the post-epileptic state was that of stupor. Bromides made him unmanageable, violent and homicidal, querulous, irritable and suspicious. The other case cited was similar. Case III was that of a semi-demented patient who became talkative, querulous and suspicious under the bromides.

Drs. Jewell, Kiernan,‡ Moyer, Rockwell, Seguin and Spitzka, about the same time, observed similar cases. Seguin's case was as follows: A twelve year old boy was the victim of petit mal which took the form of chills. When the "chills" were suppressed by the bromides, the boy became turbulent and unmanageable.

Dr. Rockwell§ reported the following case. The attacks of a female victim of grand mal were suppressed by the bromides. In consequence she became irritable, depressed and suspicious.

Some years subsequent to the discussion of Dr. Bannister's paper, Dr. C. H. Hughes|| of St. Louis reported the following case: The attacks of a victim of petit mal were suppressed by bromides and replaced by kleptomania in consequence.

* Allg. Zeitschrift für Psych. B. xxx II.

† Jour of Nerv. and Ment. Dis. 1881.

‡ Detroit Lancet 1882.

§ Jour of Nerv. and Ment. Dis. 1881.

|| Allenist and Neurologist 1883.

Nine years ago I reported the following cases* which came under my care at the Cook County Insane Hospital.

Case I. The patient had a hysterical mother, a paranoiac father and periodically dipsomaniac brother, she had frequent paroxysmal attacks of nymphomania in early puberty which disappeared at the age of twenty to give place to epilepsy. She is furiously nymphomaniacal precedent to a convulsion. In her case mental disturbance precedes, succeeds and takes the place of a convulsion; in other words she has the pre, post and psychic equivalent types of epileptic insanity. In the inter-epileptic period she is good humored and somewhat stupid. Under the use of bromides her attacks disappear but she becomes irritable, querulous and suspicious. Mixed treatment (conium, arsenic, ergot and the bromides) does not have this effect.

Case II. In the collateral ancestry there are several epileptics. Her brother has petit mal. She has the pre, post and equivalent types of epilepsy replaced by imperative homicidal conceptions. Long continued furor with vivid casual, erotico-religious, auditory and visual hallucinations result from the bromide treatment.

Case III is that of a woman who came from a markedly neurotic ancestry on both sides. By medical advice and for therapeutic reasons her father paid a man to marry her. She has had three still-born children and five others died in convulsions. Her insanity is of the type described in the two previous cases. She is frequently troubled by coprolaliac imperative conceptions between the demonstrably insane periods when she ties a bandage around her mouth to aid her will in restraining the coprolaliac utterance which it does. She is usually obliging and good tempered between her attacks. Under the bromides she becomes sullen, querulous, and is no longer able to restrain her coprolaliac tendencies.

Case IV. The patient born of a neurotic family has an early history of paroxysmal debauchery. Epileptic attacks later took the place of these paroxysms. She is usually good humored between attacks. The use of the bromides is followed by an irritable suspicious, treacherous state. Mixed treatment reduces her attacks without deteriorating the mental state. The insanity in her is pre and post epileptic.

Case V. A ten year old girl is descended from very neurotic maternal and congenital criminal paternal ancestors. She has the same types of mental trouble as the

* Medical Standard Vol. I. 1887.

first three cases. The fit as in most epileptic children is preceded by terror, then follows a purposeless running (*epilepsia cursiva*) then a fall and then the full motor explosion. Under the bromides those phenomena disappear but are succeeded by irregular kleptomaniac attacks and an inter-epileptic, querulent, suspicious, irritable mental condition.

Case VI. A female; has petit mal. She denies all epilepsy. Long after her marriage, epilepsy, although it clearly existed, was never suspected until she awoke her husband one night by beating his face with a slipper while unconscious. In the inter-epileptic period she is mild tempered, good humored and suave. Under the bromides she becomes first irritable and querulent during the inter-epileptic period, then paroxysmally furiously excited and has vivid auditory and visual erotico-religious hallucinations and is coprolaliac. Mixed treatment has no such effects.

Since then I have observed the following cases.

Case VII. A thirty four year old woman has grand mal followed by a dazed condition. Under the bromides these attacks were replaced by nymphomania with decided erotic manifestations attended by religious hallucinations and furious masturbation. The use of ergot removed these manifestations and the alternation of ergot with the bromides prevented them.

Case VIII. A forty two-year old woman has attacks of grand mal at the menstrual period and petit mal in the interregnum. These were both replaced by furor under the bromides.

Dr. L. W. Baker* of Baldwinsville, Mass., reports three cases in which the use of the bromides led to violence and decided mental disturbance.

The *Lancet*† said editorially concerning the same subject: In many cases the patient becomes wild and maniacal from the prolonged use of the drug and in the asylums this condition is well recognized under the title of "bromomania." In former times the same class of persons continued along about the same from year to year and did not require to be sent away to the asylums. This was before the bromides became the routine means of treatment in epilepsy at all the various dispensaries and out patient

*Annual Universal Medical Sciences 1888.
†May 25, 1889.

department. It is at those institutions that much damage is done by the drenching of the epileptic with the bromides. Then too many of these patients will go from one dispensary to another and thus get loaded with an amount of bromide preparations that is far in excess of the intent, knowledge or conjecture of the respective prescribers. When therefore a practitioner finds that any of his epileptics give indications of an increase of excitability and violence, it will be well to investigate into the amount of their drug consumption. It may be the invasion of bromomania.

The question naturally arises whether these affects be due to idiosyncrasies in regard to the bromides to the untoward effect of these or to the suppression of the epileptic explosions. That the bromides do produce untoward effects analogous to the stupor of epilepsy there is abundant evidence to prove.

Laborde* has observed sexual excitement to result from their use and Dr. J. E. Winters† has observed instances of visual hallucinations due to the bromides. Dr. Kiernan‡ has reported instances where aphrodisia is produced by the bromide and analogous cases are reported by Dr. G. J. Monroe.§ That these untoward effects of the bromides closely simulate the effect produced in epilepsy there can be no doubt, yet the weight of authority and indeed the weight of evidence is in favor of the opinion that these phenomena result most often from the suppression of the epileptic explosions.

Dr. Bannister|| says: "The fact that in these cases the suppression of the epileptic attacks by the bromides was accompanied by cerebral excitement and outbursts of maniacal furor is strongly suggestive that the attacks themselves are somewhat of the nature of a safety valve in some cases and that the epilepsy is itself an alternative to acute and dangerous mania."

*Gaz. Med. de Paris 1886.

†N. Y. Med. Jour 1883.

‡Medical Standard 1887.

§Medical Standard 1891.

||Jour of Nerv and Ment. Dis. 1881.

Dr. Spitzka has said: "To give the bromide alone is to postpone the explosion and generally intensify it. The very fact that a sudden suspension of bromide administration is followed by a severe explosion is clear evidence that the bromide acts rather like a load keeping down a safety valve. To use a rather coarse simile I prefer to tap an overloaded and continually refilling cistern to simply putting on a water tight cover or perhaps combine both."

My own experience, based on therapeutic use of arsenic, ergot and other agents adopted to avoid these results, tends to support this view of Stark, Spitzka and Bannister and to demonstrate that the use of ergot on this "minute explosion plan" of Spitzka is an excellent therapeutic procedure.

Lewin* remarks that from the bromides result a group of symptoms referable to a series of functional disturbances of the central and peripheral nervous system which frequently continue after suspension of the drug and which lead to a permanent impairment of the health of the person affected; this condition is bromism so-called. Voisin† makes a distinction between chronic and acute bromism and bromine cachexia. There is usually a violent frontal headache in all forms of the affection. A symptom occasionally observed as a result of the use of potassic bromide without occurrence of bromism; bronchial catarrh and cough may also supervene as complications. Acute bromism may develop suddenly even after tolerance of the potassic bromide and manifest itself in a staggering gait, mental apathy, lusterless eyes, somnolence, etc. While the form which develops slowly is characterized by a faded complexion, dryness of the mouth, foul breath, emaciation, diarrhoea, loss of the normal carriage of the body, trembling of the hands, weakness of memory and loss of will power. It may furthermore manifest itself in symptoms referable to disturbance of the cerebro-spinal system as delirium and hallucinations and in disturbances of the centers of sensation and motion. According to Voisin the bromine cachexia sets in with loss of appetite, emaciation

*Untoward Effects of Drugs.

and somnolence and the resulting condition of weakness leads to the formation of carbuncles and pneumonia which may prove fatal.

Though this classification may seem too dogmatic, the fact is established that all symptoms detailed may supervene in most varied modifications on the employment of potassic bromide. The question as to which of the constituents of this salt these peculiar effects are attributable has been variously answered at different times. It is certain sometimes that they are due to a combined action of bromine and potassium. Stark however showed in his series of very careful observations that patients on sodium bromide manifested symptoms of cerebral disturbances, such as confusion of ideas, lessening of the reflex excitability of the pharynx, uncertainty of gait, etc. Krosz* ascribes the cause of bromism to the bromine exclusively in so far as it involves the cerebral and nervous element and charges the anaemia and motor disturbances to the potassium.

The treatment of bromism consists in withdrawal of the drug, means for the acceleration of its elimination and appropriate diet. The physical strength of the patient must be improved and change of residence must be advised as a means for the relief of the physical symptoms. The kidneys should be stimulated to facilitate the elimination of the bromide inasmuch as they are the usual channels for the escape of the halogen salts. Diuretics are therefore indicated.

Abuse of the bromides is much more frequent than the remarks of Weir Mitchell tend to show. Any neurotic state be it exhaustion or not is drenched with bromides. The premonitory symptoms of bromism hence are of interest. These involve the skin, eyes, throat, bowels or bladder. As Lewis† remarks: In a short time after its administration potassium bromide gives rise to a salty and, according to some, bitter after-taste; sometimes there is also an increased secretion of saliva traceable to an irritation of the mucous membrane of the mouth and

*Arch., f. Experm. Path und Pharm. Bd. VI.

†Untoward Effects of Drugs.

a reflex action on the salivary glands. In sensitive persons it causes a burning sensation in the throat and sometimes a slight nausea and eructation and when given on an empty stomach it occasionally causes gastralgia, gastric oppression, warmth or fullness. Actual gastric catarrh following its employment is a rare occurrence unless the drug be given improperly or on an empty stomach. Occasionally erucation and vomiting are observed. In some patients shortly after a dose of the drug diarrhoea seldom occurs. On the other hand as was first pointed out by Hutte the prolonged use of small doses or larger quantities taken for a shorter time, occasions a blunting of the sensibility as well as of the reflex action of the soft palate, the root of the tongue and the posterior wall of the pharynx. Gatumeau noticed such complete analgesia after 3 grammes of the drug that irritation of the pharynx and epiglottis and of the posterior wall of the pharynx excited no reflex efforts of deglutition. Krosz noticed in himself after large doses diminution of reflex excitability in the part indicated and that it was impossible to evoke reflex nausea by irritating palate. The depression of respiratory mucous membrane sensibility is not less marked. This fact must be borne in mind in connection with the bronchial catarrh with profuse secretion which not infrequently attends the prolonged employment of this drug particularly in epilepsy, mania, etc. Stillé pointed out the possibility of the occurrence of dyspnoea through the prevention, by the diminution of the reflex excitability of the respiratory tract, of fits of coughing which may be necessary to remove accumulated mucus. Horing found that this bronchial catarrh is sometimes attended with larynx pain, paroxysms of coughing, and hoarseness. According to other authors haemoptysis, which disappears on suspension of the drug, is said to occur in many subjected to its influence. Veil found that one effect of potassic bromide is a foetid odor of the breath. This cannot be due, as in the case of mercury, to morbid changes in the mouth, inasmuch as the changes in the mouth wrought by this salt are insufficient. It is probable that the bromine in the salt suf-

fers a temporary separation from the potassium in the body and that it is partially eliminated through the lungs thus imparting the odor to the breath. It must not be inferred from this however that it is the bromine as such which excites the catarrhal changes in the mucous membranes for although a small percentage escapes from the body in the form of a vapor, the greater part immediately on its separation from the potassium finds a sufficiency of the metallic alkalies to enable it to exert its action on the various mucous membranes in the form of a bromide.

Among the mucous membranes which may be attacked are those of the eyes and nose as is evidenced by the occasional occurrence of coryza, conjunctivitis, lachrymation, etc., as a result of the employment of potassium bromide. The functions of the visual apparatus are but slightly affected. Dilatation of the pupil is an almost constant effect of repeated doses of potassium bromide. Laborde observed in several cases within one or two hours after the exhibition of the drug, cloudiness of vision and, in some instances, anaesthesia of the scleral conjunctiva. Hutte declared that myopia, amblyopia and diplopia may be caused by the drug. Martin, Damourette and Pelvet affirm this latter fact. Nicol and Mossop observed in addition to this, dilation of the retinal blood vessels.

Potassium bromide has been demonstrated to be capable of causing a wide range of affections of the genito-urinary organs. In addition to a positive increase in the secretion of urine, there is in some persons dysuria, a constant feeling of fullness of the bladder and diminution of the sensibility of the urethral and vaginal mucous membranes.

The irritating action of the bromide on the skin denuded of its epithelium and on the mucous membrane manifests itself in the frequent occurrence in many cases of a variety of cutaneous eruptions after its internal administration. These long recognized have been collectively designated as "bromine acne" although there are often other dermatoses.

Berenguier observed them in fifty three per cent. of all cases treated by potassium bromide; Clark and Amory

in sixty six per cent., and Voisin in seventy five per cent. Several authors, as Bedford Brown, noted their occurrence accompanied by local or general elevation of temperature while Veil found fever in only one case of general bromine acne. Falret always observed the occurrence of an eruption after the exhibition of 4 grammes. It is however an established fact that it may be developed after much smaller doses. Children are as a rule more liable to be attacked by it.

- The bromine eruptions which present themselves are differently described by different authors. They are however for the great part traceable to morbid changes in the sebaceous glands and their results, since the different stages of the development of these affections are present at the same time, in the progressive and retrogressive metamorphosis of the affection in one and the same person, they closely resemble the various dermatoses. The following
- may therefore be regarded as embracing all the changes of the skin due to this cause. There appear during the internal administration of bromide in certain persons, according to their specific predisposition, independently of sex and the systemic condition as regards health, at various times, various affections of the skin. The erythematous form was regarded by Veil as the sole untoward symptoms of the action of the drug. He maintained that it was attended by fever and occurred only on the lower extremities over which it was diffusely spread. The eruption was very painful; Brown described this form of eruption as an expression of the action of potassium bromide. He saw development of rubeoloid types in children under like conditions. Acne is by far the most common form of eruption following the exhibition of potassium bromide. According to Veil a thickened skin which, owing to the secretion of sebum, has an unctuous feel or an integument on which there are comedones or pre-existing acne is peculiarly predisposed to the occurrence of this form of eruption. It appears under various modifications which present a complete analogy as regards their seat and appearance to

ordinary acne. The first in its development is generally an erythematous change in the skin attended by a pricking and burning sensation. It is convenient to make a subdivision of this form into two varieties.

Acne punctata usually precedes the pustular form. It is characterized by the appearance of red elevations of the size of millet seed or peas on a more or less indurated base with an areola and attacks by preference the face, eyebrows, hairy portion of the scalp, being more rarely situated in the breast and back and almost never on the lower extremities. Veil found the most of the nodules were pierced by hairs. After a longer or shorter duration this form may disappear with desquamation or pass into: Acne pustulosa which may be regarded either as a disintegration of the nodules or as an independent variety. The pustules are at first of the size of a pin's head of a yellowish white color surrounded by an areola becoming larger later on and many assume even the form of ecthyma pustules. After a few days or weeks the pustule discharges its contents and there remains in its place a solid nodule or a red spot. The number of these pustules varies. The whole face is occasionally covered and disfigured by the densely disposed points of efflorescence. The pustules persist from days to months and should the drug not be discontinued, they may persist for years. Ordinarily they disappear in from one to three weeks after the drug has been suspended.

Voisin noticed also that the number of the pustules was increased and diminished with the increase and diminution of the quantity of the bromide taken. After healing they frequently leave behind slightly depressed irregularly round cicatrices or red spots. This pustular variety select the same location for its appearance as the papular variety. In some cases the pustules become confluent and on the scalp they are usually covered with crusts. Veil examined the pus of the acne with negative results for bromine being able to discover it daily in the urine.

Guttmann was able to demonstrate the presence of bromine in the secretions of the pustules in a man in whom pustular acne had supervened on the employment of the

potassic bromide. For a year the drug had been given, at first in quantities of 4 grammes a day and afterward increased to 12 grammes. The urticarious form was several times observed by Veil. It appeared only in the lower extremities and on erythematous surfaces in the form of wheal-like elevations from a quarter to a half inch in diameter, very sensitive and changed by degrees into a wart-like excrescence which ulcerated. The ulcer thus formed was deep and ill conditioned and disappeared as soon as the bromide was discontinued. This variety is doubtless identical with the tumor-like variety described by Voisin which is of the form of oval shaped tumors or elevation from half an inch to two inches in diameter, of a rose or cherry color with indurated base. It appears exclusively on the lower extremities, and particularly on the calves of the legs that are covered with small yellowish prominences which on closer examination prove to be agminated acne-like pustules from which cream-like contents exude either spontaneously or on puncture. It is very painful when touched and may, should the drug not be discontinued, change into foul atonic ulcers which may continue for from three to four months but which disappear in two or three days after the suspension of potassium bromide.

Neumann established the fact that these tumors are caused by an inflammation of the glands of the skin accompanied by an increase of their cellular elements and a consecutive hypertrophy of the cells in the cutaneous tissue besides also an enlargement of the papillae of the skin. The hair follicles are enlarged and assume the form of long tubes or globular sacs filled with pus, epithelial cells and masses of smegma.

Erythema nodosum was, in two out of ninety-six cases treated with bromide, observed by Voisin on the upper and lower extremities as also on the trunk there were slightly elevated patches of different forms, some with smooth margins and some with irregular outlines. They were from one fifth inch to two inches in diameter, of a dark red color in the centre, and lighter toward the periphery. They arise and disappear very quickly and as regards form,

color and induration of the base they are identical with erythema nodosum while in their reappearance after being rubbed they resemble urticaria.

Veil reports his observation of such cases of erythema nodosum but it was always confined to the lower extremities. Smith saw also after larger doses of potassium bromide largely elevated patches of the size of a fifty cent piece of a purplish color and having their seat on both arms. They bled very readily, were of an indolent character and disappeared after the discontinuance of the drug.

Voisin observed in a single case the appearance of a weeping eczema on the thighs after the bromides had been administered for over a year. The coincidence of the occurrence of furuncles with the employment of the potassium bromide has been noted by so many authors that there can be no doubt that the two stand in the relation of effect and cause. Voisin, Smith and Neumann observed the furuncles in various degrees of development and on different parts of the body. The latter of these observers saw them on the hairy portions of the face and on the forehead and neck. It must be mentioned in conclusion that Veil noticed the appearance of numerous warts on the face and legs of a lad in a short time after he had commenced the use of bromide.

There is a variety of opinion as to the manner in which the various affections of the skin which have been described occur after the employment of the bromide salt. While Clarke and Amory regard the bromine acne as a trophoneurosis and not as dependent on the elimination of the bromide, Veil who failed to discover any bromine in the acne pustules, does not regard the eruption as due to a local irritation of the sebaceous glands. Martin, Damourette and Pelvet attribute the cause of the affection to the action of the drug on the skin through which channel it is eliminated. The fact that Guttmann demonstrated the presence of the potassic bromide in the contents of acne pustules changes the a priori probability that the salts may be eliminated through the skin into a certainty. By this fact on the one hand an analogy is established between similar eruption excited by iodine salts

and on the other hand a confirmation of the view that it is the bromine and not the potassium which is the cause of the disturbance. In support of this assertion the fact may be adduced that other combinations of bromine have a similar effect. Thus Gowers showed that similar eruptions follow the use of ammonium bromide. Stark reports that in seventy five per cent. of all the cases of epilepsy treated with sodium bromide, acne appeared and was of longer duration and more frequently went on to suppuration.

These bromide dermatoses are as a rule the first evidences of the untoward effects of the bromides, then follow the throat, eye, bladder and bowel disorders, and later the psychic and neurotic phenomena occur.

AN ATAXIC PARANOIAC OF GENIUS.

A Study of E. T. A. Hoffmann.

By JAS. G. KIERNAN, M.D., Chicago.

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THE literature of the late eighteenth and early nineteenth centuries was dominated by a psychological tendency which sometimes passed into a mysticism resembling Rosicrucianism and sometimes explained this mysticism as a product of mental morbidity. Brockden Brown's Wieland is an illustration of the last and E. T. A. Hoffmann's stories of the first. Of him Sir Walter Scott* remarks:

"The author who led the way in this department of literature was Ernest Theodore William Hoffmann the peculiarity of whose genius, temper and habits fitted him to distinguish himself where imagination was to be strained to the pitch of oddity and bizarrie. He appears to have been a man of rare talent, a poet, artist and a musician but unhappily of a hypochondriac and whimsical disposition which so carried him to extremes in all his undertakings that his music became capricious, his drawings caricatures and his tales, as he himself termed them fantastic extravagances."

Lombroso's† opinion of Hoffmann is singularly identical with the calm judgement of Scott, taking into consideration the psychiatric terms in which it is couched, Lombroso

**The Supernatural in Fictitious Composition.*

†*Man of Genius.*

remarks that "E. T. A. Hoffmann, that strange poet, artist, and musician, whose drawings ended in caricature, his tales in extravagances and his music in a mere medley of sound, but who was nevertheless the real creator of fantastic poetry, was a drunkard. Many years before his death he wrote in his journal How is it that, awake or asleep my thoughts are always running in spite of myself on this miserable theme of madness. Disorderly ideas seem to rise out of my mind like blood from opened veins. He was so sensitive to atmospheric variations that he constructed a meteorological scale out of his subjective emotions. For many years he was subject to a real monomania of persecution with hallucinations in which the fantasies of his stories were converted into realities."

Hoffmann was born in Königsberg, Germany, in 1776. His maternal ancestors were neurotic. His early years were those of a neurotic introspective dreamy child. He was dwarfish in stature although sprung from a race of more than middle height. He had oblique eyes and Turanian-like features but the vicinity of his native place had been a Turanian colony. His puberty phenomena were those of the sexual neurasthenic and on them developed the suspicioinal state to which Lombroso refers. He was a quick but irregular student. At the age of twenty-two he was admitted to the bar passing his final examination at twenty-four. He was then appointed assessor to the Posen Court and in 1804 was transferred to the Warsaw Court as Councillor. At Warsaw he became the centre of musical society. In 1807 he returned to Berlin where a series of tales in a local musical journal attracted much attention and were subsequently republished with a preface by Jean Paul Richter. He composed at this time among other things, a Miserere by order of the grand duke of Wurzburg and for the proprietors of the Bamberg theater, music to Kotzebue's opera "*Das Gespenst*". He gave lessons in music and drawing, decorated saloons and painted portraits to order. The money which he inherited at the death of his uncle did not suffice to pay his debts and he had been reduced to selling his last coat for food when his friends

obtained for him the post of musical director to a theatrical company performing alternately at Dresden and Leipsic. Hoffmann was writing romances in a garret in Dresden or, bedridden by gout (ataxia), was drawing caricatures of the "verwunschte Franzosen" while Napoleon and the allied armies were struggling round its walls. On the fall of Napoleon he returned to Berlin and was reinstated in the legal profession. Two years later he was appointed counsellor in the supreme court and from that time enjoyed a good income, a dignified position and the society of his best friends.

His changes in career were due to that suspicioinal querulent mental state of paranoiacs which so often mars their otherwise great powers. This in combination with its induced changes of career acted in a vicious circle. As Sir Walter Scott remarks: The shifts, the uncertainty, the precarious nature of this kind of existence had its effects doubtless upon a mind which nature had rendered peculiarly susceptible of elation and depression and a temper, in itself variable, was rendered more so by frequent change of place and of occupation as well as by the uncertainty of his affairs. He cherished his fantastic genius with wine in considerable quantities and indulged liberally in the use of tobacco. Even his outward appearance bespoke the state of his nervous system, a very little man with a quantity of dark brown hair and eyes looking through his elf locks that,

"E'en like grey goss-hawk's stared wild",

indicated that touch of mental derangement of which he seems to have been himself conscious when entering the foregoing fearful memorandum in his diary:

Circumstances arose in the course of Hoffmann's unsettled and wandering life which seemed to his own apprehension to mark him as one who "was not in the roll of common men." These circumstances had not as much of the extraordinary as his fancy attributed to them. For example he was present at a deep play at a watering place, in company with a friend, who was desirous to venture for some of the gold which lay upon the table. Betwixt hope of gain and fear of loss, distrusting at the same time his own

luck he, at length, thrust into Hoffmann's hand six gold pieces and requested him to stake them for him. Fortune was propitious to the young visionary as he was totally inexperienced in the game and he gained for his friend about thirty Fredericks d'or. The next evening Hoffmann resolved to try fortune on his own account. The purpose was not a previous determination but one which was suddenly suggested by his friend's request to undertake the charge of staking a second time on his behalf. He advanced to the table on his own account and deposited on one of the cards the only two Fredericks d'or of which he was possessed. If Hoffmann's luck had been remarkable on the former occasion, it now seemed as if some supernatural power stood in alliance with him. Every attempt which he made succeeded, every card turned propitiously. "My senses became unmanageable and as more and more gold streamed in upon me it seemed as I were in a dream out of which I only awoke to pocket the money. The play was given up as usual at two in the morning. At the moment, when I was about to leave the room, an old officer laid his hand upon my shoulder and regarding me with a fixed and severe look said, 'young man if you understand this business so well, the bank which maintains free table is ruined but if you do not so understand the game reckon upon it securely that the devil will be as sure of you as of all the rest of them'. Without waiting an answer he turned away. The morning was dawning when I came home and emptied from every pocket heaps of gold on the table. Imagine the feeling of a lad in a state of absolute dependance and restricted to a small sum of pocket money who finds himself as if by a thunderclap placed in possession of a sum enough to be esteemed absolute wealth at least for the moment. But while I gazed on the treasure my state of mind was entirely changed by a sudden and singular agony so severe as to force the cold sweat drops from my brow. The words of the old officer now for the first time rushed upon my mind in their fullest and most terrible acceptation. It seemed to me as if the gold which glittered upon the table were the earnest of the bargain by

which the Prince of Darkness had obtained possession of my soul which never more could escape eternal destruction. It seemed as if some poisonous reptile was sucking my heart's blood and I felt myself fall into an abyss of despair."

Then the ruddy dawn began to gleam through the window, wood and plain were illuminated by its beams and the visionary began to experience the blessed feeling of returning strength to combat with temptations and to protect himself against the infernal propensity which must have been attended with total destruction. Under the influence of such feelings Hoffmann formed a vow never again to touch a card which he kept till the end of his life. The lesson of the officer upon Hoffmann was good and its affects excellent, but the peculiar disposition of Hoffmann made it, as Scott remarks, work upon his mind more like an empiric's remedy than that of a regular physician. He renounced gambling, less from a conviction of its wretched consequences than because he was actually afraid of the Evil Spirit in person.

Hoffmann's change of name from William to Amadous would to-day, be justly regarded as a fetishyic atavism suggestive of mental abnormality. In his time, it was often a mere mark of reverence. In marking his esteem for Mozart in this way, he was fully in accord with his environment. Family names then did not in many districts in Europe have the weight they now have.

Scott attempts in a most logical manner to account for Hoffmann's mental state (as expressed in his tales). Speaking of Hoffmann, soon after a battle wherein a friend of Hoffmann was killed at his side, Scott remarks that: "It may however be supposed that an imagination which was always upon the stretch received a new impulse from the scenes of difficulty and danger through which our author had so lately passed." Another calamity of a domestic nature must also have tended to the increase of Hoffmann's morbid sensibility. During a journey in a public carriage it chanced to be overturned and the author's wife sustained a formidable injury on the head by which she was a sufferer for a length of time.

All these circumstances joined to the natural nervousness of his own temper tended to throw Hoffmann into a state of mind, very favorable perhaps, to the attainment of success in his own peculiar mode of composition, but, far from being such as could consist with the right and well balanced state of human existence on which philosophers have been disposed to rest the attainment of the highest possible degree of acuteness by which the mind is incited, not only without the consent of our reason but even contrary to its dictates, falls under the condition deprecated in the beautiful Ode to Indifference :

Nor peace, nor joy the heart can know,
Which like the needle true,
Turns at the touch of joy or woe.
But turning, trembles too.

The pain which in one case is inflicted by an undue degree or bodily sensitiveness is, in the other, the consequence of an excited imagination. Nor is it easy to determine in which the penalty of too much acuteness or vividness of perception is most severely exacted. The nerves of Hoffmann in particular were strung to the most painful pitch which can be supposed. A severe nervous fever about the year of 1807 had greatly increased the fatal sensibility under which he laboured which, acting primarily on the body, speedily affected the mind. He had himself noted a sort of graduated scale concerning the state of his imagination which, like that of a thermometer, indicated the exaltation of his feelings up to a state not far distant probably from that of actual mental derangement. It is not perhaps easy to find expressions corresponding in English to the peculiar words under which Hoffmann classified his perceptions but we may observe that he records as the humour of one day a deep disposition towards the romantic and religious; of a second, the perception of the exalted or excited humorous; of a third that of the satirical, of a fourth that of the excited or extravagant musical sense; of a fifth, a romantic mood turned toward the unpleasing and the horrible; of a sixth, bitter satirical propensities excited to the most romantic, capricious and exotic degree; of the seventh, a state of quietism of mind open to receive the most beauti-

ful, chaste, pleasing and imaginative impressions of a poetical character; of an eight, a mood equally excited but accessible only to ideas the most unpleasing, the most horrible, the most unrestrained at once, and most tormenting. At other times the feelings which are registered by this unfortunate man of genius are of a tendency exactly the opposite to those which he marks as characteristic of his state of nervous excitement. They indicate a depression of spirit, a mental callousness to those sensations to which the mind is at other times most alive, accompanied with the melancholy and helpless feeling which always attends the condition of one who recollects former enjoyment in which he is no longer capable of taking pleasure. This species of moral palsy is a disease which more or less affects every one, from the poor mechanic, who finds that his hand, as he expresses it, is so out that he cannot discharge his usual task with his usual alacrity, to the poet whose muse deserts him when perhaps he most desires her assistance. In such cases wise men have recourse to exercise or change of study; the ignorant and infatuated seek grosser means of diverting the paroxysm. But that which the person, whose mind is in a healthy state, but a transitory though disagreeable feeling, becomes an actual disease in such minds as that of Hoffmann which are doomed to experience in too vivid perceptions, in alternate excess but far most often and longest in that which is painful, the influence of an over-excited fancy. It is to minds so conformed that Burton appeals his abstract of melancholy giving alternately the joy and the pains which arise from the influence of the imagination. The verses are so much to the present purpose that this changeful and hypochondriac system of mind cannot be better described than by them.

"When to myself I act and smile,
With pleasing thoughts the time beguile,
By a brook-side or wood so green,
Unheard, unsough for, and unseen,
A thousand pleasures do me bless
And crown my soul with happiness,
All my joys besides are folly,
None so sweet as Melancholy.

When I lie, sit, or walk alone
 I sigh, I grieve, making great moan
 In a dark grave, or irksome den,
 With discontents and tories then
 A thousand miseries at once
 Mine heavy heart and soul encounce
 All my griefs to this are jolly;
 None so sour as Melancholy.

Methinks I hear, methinks I see,
 Sweet musick, wonderous melody,
 Towns, palaces and cities fine.
 Here now then the world in mine.
 Rare beauties, gallant ladies shine
 Whate'er is lovely or divine
 All other joys to this are folly
 None so sweet as Melancholy.

Methinks I hear, methinks I see,
 Ghosts, goblins, friends, my chantages
 Presents a thousand ugly shapes,
 Headless bears, black men and apes,
 Doleful uterries and fearful sighs
 My sad and dismal soul affrights
 All my griefs to this are jolly
 None so damn'd as Melancholy.

In the transcendental state of excitation described the painful gloomy mood of the mind is, generally speaking, of much more common occurrence than that which is genial, pleasing or delightful. Every one, who chooses attentively to consider the workings of his own bosom, may easily ascertain the truth of this assertion which indeed appears a necessary accompaniment of the imperfect state of humanity which usually presents in anticipation of the future so much more that is unpleasing than is desirable: in other words, where fear has a far less limited reign than the opposite feeling of hope. It was Hoffmann's misfortune to be peculiarly sensible of the former passion and almost instantly to combine with any pleasing sensation as it arose the idea of mischievous or dangerous consequence.

This pessimism was an expression of neurotic defect and, independently of the fortuitous factors detailed by Scott, would sufficiently predispose to all the morbid mental phenomena, hallucinations and imperative conceptions which found expression in his tales. He had the mental make up of the paranoiac developed on that bizarre anatomical substratum which predisposes to disturbances of the ego. It is

usually assumed that the “*ego*” is a centralized entity when in reality, as Ribot* points out:

The “*ego*” is a co-ordination. It oscillates between two extreme points—perfect unity and absolute incoordination else it ceases to be—and all the intermediate degrees exemplified without any line of demarcation between normal and abnormal, health and disease; the one trenching upon the other. Wherefore the “*ego*” in the psychological sense is the cohesion, for a given time, of a certain number of clear states of consciousness, accompanied by others less clear and by a multitude of physiological states which though unaccompanied by consciousness are not less, but even more affective than the conscious states.

The physical substratum of these states has been pointed out by Spitzka, who says:

Meynert, many years ago, called attention to the presumptive physiological *role* of certain arched fibers, which are known to unity adjoining as well as distant cortical areas with each other. I should if asked to point to the chief factor on which the higher powers of the human brain depend, lay less stress on the cortical development, as such, than on the immense preponderance of the white substance, due to the massive associating tracts. Although the projecting tracts are also larger in man than in any other animal, yet so great is the preponderance of the associating mechanism that the elimination of the former would not reduce the white substance of the hemisphere by one-half its bulk. Both projecting and associating fiber masses increase in a nearly geometrical progression as we pass from the lower animals to man; but the ratio of progression of the associating fiber masses exceeds that of the projecting tracts. There are certain convolutions which are almost exclusively connected with *fibræ arcuatae*; that is, with associating tracts, and which enjoy but little direct connection with the bodily periphera. It is reasonable to believe that such cortical areas, so connected, play an important *role* as a substratum of the abstractions. Such cortical areas and their subsidiary associating tracts, bound into the

*Alienist and Neurologist, 1890.

still higher unity of the entire hemisphere, constitute the substratum of the metaphysician's "*ego*." A disturbance of the intricate relations which are involved in the material basis of the "*ego*," must be accompanied by a disturbance of the "*ego*," or may even render an "*ego*" an impossibility. It is on accurate connection of projection or as with projection areas, and of these with "abstraction" areas that the faculty of logical correlation must depend. The correction of the countless errors made during a lifetime is possible only by an influence analogous to inhibition, exercised by the association fasciculi, and the proper aim of every really educational system is to develop this control of the various cortical screens on each other, a correction which, with approaching maturity, is delegated to the "abstraction" field.

Independently of paranoiac maldevelopment, Hoffmann, at about twenty-eight, began to manifest the initial symptoms of locomotor ataxia whose phenomena were as already stated charged to gout. The changeable cerebral vasomotor state, thus produced, would alternate the mind between exaltation and depression, and produce hallucinations based on ataxic paraesthesia. Indeed, as thus described by Scott, the mental condition of Hoffmann closely simulated the hallucinatory period of transformation of paranoia, which precedes the development of grandiose delusions on persecutory and suspicional delusional states:

"Thus he was followed especially in his hours of solitude and study by the apprehension of mysterious danger to which he conceived himself exposed. And the whole tribe of demi-gorgons, apparitions and fanciful spectres and goblins of all kinds, with which he has filled his pages although, in fact, the children of his own imaginations, were no less discomposing to him than if they had had a real existence and actual influence upon him. The visions which his fancy excited are stated, often, to be so lively that he was unable to endure them and in the night, which was often his time of study, he was accustomed frequently to call his wife up from bed that she might sit by him while he was writing and protect him by her presence from

the phantoms conjured up by his own excited imagination."

Had these hallucinatory and delusional tendencies not found an outlet in literature (similar to that which saved Bunyan) the grandiose delusions of paranoia would have developed, become fixed and rendered the victim useless. Scott shows a singularly clear insight into the morbidity of Hoffmann's mental state but ignores, not astonishingly, the fact that this was the result of central defect not produced by the exterior conditions when he points out that:

"In fact the inspiration of Hoffmann so often resembled the ideas produced by the immoderate use of opium, that we cannot help considering his case as one requiring the assistance of medicine rather than of criticism, and while we acknowledge that with a steadier command of his imagination, he might have been an author of the first distinction yet, situated as he was and indulging the diseased state of his own system, he appears to have been subject to the undue vividness of thought and perception of which the celebrated Nicolai became at once the victim and the conqueror. Phlebotomy and cathartics joined to sound philosophy and deliberate observation might as in the case of that celebrated philosopher have brought to a healthy state, a mind, which we cannot help regarding as diseased and his imagination soaring with an equal and steady flight might have reached the highest pitch of the poetical profession."

In all probability had Hoffmann not been spurred by disease into morbid introspection, he would not have produced anything but would have settled into a humdrum lawyer. Had the taste of the time in literature not given him an outlet, his suspicional paranoid state would have made him a delusional world-betterer and ended his career in the insane hospital or the prison. In Hoffmann's career often appeared the moral anaesthesia concomitant on the egotism of paranoia. He also had physical anaesthesia due either to it or locomotor ataxia which produced mental effects that Scott, in the following account of his death, ascribes to heroism.

"The death of this extraordinary person took place in

1822. He became affected with the disabling complaint called *tabes dorsalis* which gradually deprived him of the power of his limbs. Even in this melancholy condition he dictated several compositions which indicate the force of his fancy particularly one fragment entitled, ‘The Recovery’, in which are many affecting allusions to the state of his own mental feelings at this period, and a novel called ‘The Adversary’ on which he had employed himself even shortly before his last moments. Neither was the strength of his courage in any respect abated. He could endure bodily agony with firmness though he could not bear the visionary terrors of his own mind. The physicians made the severe experiment whether by applying the actual cautery to his back the activity of the nervous system might not be restored. He was so far from being cast down by the torture of his medical martyrdom that he asked a friend who entered the apartment after he had undergone it whether he did not smell roasted meat. The same heroic spirit marked his expressions that he would be perfectly contented to lose the use of his limbs if he could but retain the power of working constantly by the help of an amanuensis”.

From a literary standpoint Hoffmann’s tales approximate Poe, Hawthorne and Brockden Brown. Yet as will be seen from the following analysis by Sir Walter Scott, one of Hoffmann’s most characteristic tales (*The Sandman*) is destitute of the healthy human interest found alike in the “Fall of the House of Usher,” “The Unpardonable Sin” and “Wieland”.

In order to write such a tale as the “Sandman” Hoffmann must have been deep in the mysteries of that fanciful artist (Callot) with whom he might certainly boast a kindred spirit. The narrative is

“Half horror and half whim
Like fiends in glee, ridiculously grim”.

Nathaniel the hero of the story acquaints us with the circumstances of his life in a letter addressed to Lothair, the brother of Clara, the one being his friend, the other his betrothed bride. The writer is a young man of a fanci-

ful and hypochondriac temperament, poetical and metaphysical in an excessive degree with precisely that state of nerves which is most accessible to the influence of imagination. He communicated to his friend and his mistress an adventure of his childhood. It was, it seems, the custom of his father, an honest watchmaker, to send his family to bed upon certain days earlier in the evening than usual. The mother enforcing this observance used to say; "To bed children the Sandman is coming". In fact on such occasions, Nathaniel observed that, after their hour of retiring, a knock was heard at the door, a heavy step echoed on the staircase, some persons entered his fathers apartment and occasionally a disagreeable and suffocating vapor was perceptible through the house. This then was the Sandman, but what was his occupation and what was his purpose; the nursery maid being applied to gave a nursery maid's explanation that the sandman was a bad man who flung sand in the eyes of little children who did not go to bed. This increased the terror of the boy but at the same time raised his curiosity. He determined to conceal himself in his father's apartment and wait the arrival of the nocturnal visitor, he did so and the Sandman proved to be no other than the lawyer Copelius whom he had often seen in his father's company. He was huge, left-handed, splay-footed sort of personage with a large nose, great ears, exaggerated features and of ogre-like aspect which had often struck terror into the children before this ungainly limb of the law was identified with the terrible Sandman. Hoffmann has given a pencil sketch of his uncouth figure which he has certainly contrived to represent as revolting to adults as it might be terrible to children. He was received by the father with a sort of humble obeisance, a secret stove was opened and lighted and they instantly commenced chemical operations of a strange and mysterious description but which immediately accounted for the species of vapor which had been perceptible on other occasions. The gestures of the chemist grew fantastic, their faces even that of the father seemed to become wild and terrific. Nathaniel terrified, screamed, left his hiding place, and was detected by the chemist for such

Copelius was, who threatened to pull out his eyes and was, with some difficulty, prevented by the father's interference from putting hot ashes on the child's face. Nathaniel's imagination was deeply impressed by the terror he had undergone and a nervous fever was the consequence, during which the horrible figure of the disciple of Paracelsus was the spectre which tormented his imagination. After a long interval and when Nathaniel had recovered, the nightly visits of Copelius to his pupil were renewed but the latter promised his wife that it should be for the last time. It proved to be so but not in the manner which the old watchmaker meant. An explosion took place in the chemical laboratory which cost Nathaniel's father his life; his instructor in the fatal art to which he had fallen a victim was nowhere to be seen. It followed from these incidents calculated to make so strong an impression upon a lively imagination, that Nathaniel was haunted through life by the recollections of this horrible personage. Copelius became in his mind identified with the evil principle. When introduced to the reader the young man was studying at the University, where he is suddenly surprised by the appearance of his old enemy, who now personates an Italian or Tyrolese peddler, dealing in optical glasses and such trinkets and although dressed, according to his new profession, continuing under the Italianized name of Guiseppe Coppola to be indentified with the ancient adversary. Nathaniel is greatly distressed at finding himself unable to persuade either his friend or his mistress, of the justice of the horrible apprehension, which he conceives ought to be entertained, from the supposed identity of this terrible jurisconsult with his double ganger, the dealer in barometers. He is also displeased with Clara because her clear and sound good sense rejects not only his metaphysical terrors but also his inflated and affected strain of poetry. His mind gradually becomes alienated from the frank, sensible and affectionate companion of his childhood and he grows in the same proportion attached to the daughter of Professor Spalazani whose house is opposite to the window of his lodgings. He has thus an opportunity of frequently remarking Olympia, as she sits in her apartment.

Although she remains there for hours without reading, working or even stirring, he yet becomes enamoured of her extreme beauty, despite the insipidity of so inactive a person. But much more rapidly does this fatal passion proceed when he is induced to purchase a perspective glass from the peddler whose resemblance was so perfect to his old object of detestation. Deceived by the secret influence of the medium of vision, he becomes indifferent to what was visible to all others who approach Olympia, to a certain stiffness of manner which made her walk as if by the impulse of machinery, to a paucity of ideas which induced her to express herself only in a few short but reiterated phrases, in short to all that indicated Olympia to be, what she ultimately proved, a mere puppet or automaton, created by the mechanical skill of Spalazani, and inspired with an appearance of life by the devilish arts of the alchemist advocate and weather-glass seller Copelius alias Coppola. At this extraordinary and melancholy truth the enamoured Nathaniel arrives by witnessing a dreadful quarrel between the two imitators of Prometheus while disputing their respective interests in the subject of their creative power. They uttered the wildest imprecations and tearing the beautiful automaton limb from limb, belabored each other with the fragments of their clock-work figure. Nathaniel not much distance from lunacy before, became frantic on witnessing this horrible spectacle.

The tale concludes with the moon-struck scholar attempting to murder Clara by precipitating her from a tower. The poor girl being rescued by her brother, the lunatic remains alone on the battlements, gesticulating violently reciting the gibberish which he had acquired from Copelius and Spalazani. At this moment, while the crowd below are devising means to secure the maniac, Copelius suddenly appears among them, assures them that Nathaniel will presently come down of his own accord and realizes his prophecy by fixing on the latter a look of fascination, the effect of which is instantly to compel the unfortunate young man to cast himself headlong from the battlements.

This wild and absurd story is in some measure redeemed

by some traits in the character of Clara, whose firmness, plain good sense and frank affection are placed in agreeable contrast with the wild imagination, fanciful apprehensions and extravagant affections of her crazy-pated admirer.

It is impossible to subject tales of this nature to criticism. They are not the vision of a poetical mind, they have scarcely even the seeming authenticity which the hallucinations of lunacy convey to the patient.

They are the feverish dreams of a light headed painter to which, though they may sometimes excite by their peculiarity or surprise by their oddity, we never feel disposed to yield more than momentary attention.

This tale, partly an autobiographic sketch of Hoffmann's childhood, reveals the atavistic tendency of the paranoiac to place upon the trivial folklore of childhood, that mystic fetichic significance, born of the terror of the unknown, which characterizes races in an early stage of evolution.

HYSTERICAL ANALGESIA.

By C. C. HERSMAN, M. D.

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THE following remarkable case I report from my note book.

Mrs. N., aet, 44 years, white, married, two children (grown). Personal history : an element of insanity in her family. She has been reported insane following the birth of both her children. Eight years ago she became pregnant a third time. From the beginning vomiting was so incessant that at about the seventh week she had to be relieved of the contents of the uterus to save her life. This was followed by an attack of melancholia with suicidal tendency, from which she is reported as having recovered, resuming her household duties.

In September, 1895, her husband committed suicide, the news of which was abruptly conveyed to her and she sank into a condition of mild melancholia with hysterical symptoms (hysterical melancholia) and a complete loss of sensation to pain while tactile sense seemed to be normal.

Skin. No pain from prick of pin or pinching the flesh, neither does she distinguish between heat and cold.

Mucous Membranes. No pain from rubbing finger through the eye, not even a reflex of lids, or prodding tongue or mouth with a sharp instrument. Her desire for food seemed to be paralyzed and her taste destroyed. Eating is mechanical, although she has been known to slip food from the table to her room.

Sphincters. She never has a desire to evacuate her bowels or bladder, but as she is an intelligent and tidy patient, she frequently goes to the lavatory, but never knows that she is having an action of bowels or bladder except from objective symptoms, no subjective (natural) sensation whatever. She is constipated and bowels rarely move except by catharsis.

Emotions. She has lost all maternal feeling for her children and fraternal feeling for her friends. When told that her son was injured in a railroad accident she was not affected in the least. Her desire for sleep seems to be gone as she rarely sleeps without hypnotics, and even then claims to sleep poorly.

I find nothing like this recorded. Even Gowers, in his elaborate work, mentions nothing similar. Dana mentions only hemi-analgesia, segmental analgesia and disseminated analgesia, the latter being least frequent, which I doubt, as I think the complete analgesia with the complications related is rarest. Dercum, I believe, mentions two cases of complete in his recent work reported by a foreign writer. But a complete analgesia with a blunting of the emotions, functions and almost all the senses, I think a very rare affection, this, possibly, being the only one of this nature reported.

STATE CARE AND STATE MAINTENANCE FOR THE DEPENDENT INSANE IN THE STATE OF NEW YORK.*

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AMONG the many serious problems with which States and communities are confronted to-day, there is probably none that rivals in importance, whether viewed from a medical, social, economic or philanthropic standpoint, that of securing, at a minimum of cost to the taxpayers, proper care and treatment to the vast army of dependent sufferers from that most serious, most dangerous and most far-reaching in effect of all diseases known to medical science, insanity.

Aside from its humane aspect, which must always be regarded as of primary importance, since the claims of suffering humanity take precedence of merely material or pecuniary policies, the financial side of the problem of suitable provision for the insane, involving as it does, even under the most economical methods, the expenditure of vast sums of money for lands and buildings with their equipment and furniture, besides an enormous annual outlay for maintenance, repairs, renewals and enlargements, may well command the most serious attention and organized cooperation of the legislator, the political economist, the tax payer and the humanitarian.

Provision for the dependent insane in the State of New York to-day represents a permanent investment by the

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taxpayers of, in round numbers, \$23,000,000, while the average annual expenditure for maintenance, repairs, renewals and enlargements amounts, in round numbers, to \$4,500,000. The number of insane patients supported at public expense on October 1st, 1895, was 19,369, and the number of officers and employees 115 and 3,300 respectively. Applying this ratio of cost, which is a fair average, to the entire United States, the importance and magnitude of the subject at once becomes apparent.

Turning for a moment to a consideration of the humane aspects of the question, it will be conceded that of all diseases which afflict mankind, insanity is by far the most frequent, most widely prevalent and most far-reaching in its effects, whether as regards the interests of the afflicted individual or of his family or the commonwealth; that a vast majority of its victims must, during its existence, be deprived of personal liberty and removed from their homes to be cared for in institutions established and maintained at public expense; that among the dependent insane are to be found numerous representatives of all professions, trades and occupations, whose financial, social and intellectual status were previously of a high order, and most of whom were respectable, self-supporting citizens—many of them taxpayers—prior to the onset of their disease; that the commonwealth is in duty bound to provide these dependent sufferers with suitable shelter, food, and raiment, together with means of occupation and diversion, and competent medical care and supervision.

It need hardly be said that in the consideration of this question humanity should have the first place, but it must also be admitted that its economy must have a prominent place. Hence, it follows that that policy ought to be pursued which will, first of all, secure everything that is essential to proper care and treatment and will, at the same time, limit the cost to such sums as the truest economy for the state would suggest. In other words, the dictates of humanity demand that the insane shall be amply provided with everything which medical science has determined to be essential to the recovery of those who are recoverable, as well as for

the proper care, comfort and amelioration of those who remain unrecovered.

These premises being granted, the question naturally arises as to the best method of attaining this desirable end, having in view the demands of humanity, on the one hand, and the limitations imposed by a due regard for economy in the expenditure of public funds, on the other. In other words, how can the established requirements of a proper standard of care and treatment for the dependent insane best be fulfilled at a minimum cost to the taxpayers? For, aside from the question of humanity, the interests of true economy would demand that the utmost effort be made to secure to the insane that system of treatment and care which experience has shown, is most likely to give the best results, whether as regards the percentage of recoveries, the improvement and well-being of the unrecovered, or the cost of maintenance.

As showing the importance, as regards taxation, of making every reasonable effort to minimize the heavy burden which insanity imposes upon the state, mention may be made of the fact that in the development of the wealth of a state, the life of each individual has an estimated financial value of \$200 per annum. On the other hand, the average duration of insane life is about twelve years, and the average annual cost of properly maintaining an insane person in a public institution, including interest on investment, is about \$200. It appears, therefore, that every insane dependent represents a pecuniary loss to the state of approximately \$400 for each year that he remains under care as a public charge. Hence, if the average longevity of the insane is twelve years, and the annual per capita cost of maintenance is \$200, each insane person who fails of recovery during this period represents a loss to the state of \$2,400; whereas, a sane person for a like period of time would represent a gain of \$2,400. The mere presentation of these figures will suffice to suggest the importance, as regards taxation, of determining and adopting that system of caring for the insane, which is likely to promote the greatest number of recoveries. But even though an individual

contributed nothing to the wealth of the state when sane, it would still be in the interest of economy to provide for him, when he becomes insane, such environment and such treatment as will insure every opportunity of restoring him to the ranks of the wage-earners, or at least of enabling him to return to his home, and thus relieve the public of the burden of his support.

From the foregoing it is quite apparent that that method of care and treatment which will insure to the insane the fullest measure of benefit in these respects will, in the end, also prove the most economical. Such being the case, it becomes pertinent to consider the relative merits of the two systems of caring for the insane which have been and are still in vogue in this country, namely, "State care" and "County care."

These two systems—the one as conducted by the state and the other as conducted by counties or municipalities—having been fairly tested for many years and under favorable conditions, the comparative merits of each may be determined with sufficient accuracy. It will not seriously be claimed that both system are equally good. Certainly one is demonstrably better than the other. Each one must be regarded as a whole, and is, therefore, not to be judged by parts, or by sporadic instances of success or failure. If, in a majority of points of comparison, either system be found inferior, that system should be everywhere abandoned and the other one adopted in its stead. The sole question, therefore, is: Which of the two systems has been shown by experience to be productive of the greatest good to the insane themselves, and to the community at large?

Respecting the relative cost of each, it may be said, at least so far as experience in the State of New York has shown, that in every instance where local authorities have undertaken to establish and maintain an institution for the insane on a *curative* or *hospital* basis, like that of a state hospital, the standard of care has in no respect equaled, even approximately, that which the poorest of the state institutions affords. Many of the keepers of these county asylums in the State of New York freely admitted that if they were

required to maintain a standard of care equal to that of the state institutions, their per capita cost would largely exceed the rates then charged by the state asylums for the chronic insane. In truth, it may be said that not one of the twenty or more so-called county asylums licensed by the New York State Board of Charities prior to the passage of the State Care Act in 1890, had proper facilities in any essential particular for the care and treatment of insane patients; most of them being only parts of the poorhouse proper, and without even a resident medical officer. They were ~~merely~~ custodial establishments, the inmates of which were maintained in substantially all respects on a poorhouse basis, frequently in intimate association with common paupers. In a word, these unfortunate victims, many of whom were persons of respectability and refinement, were branded as incurable and then pauperized by consignment to these hopeless and cheerless surroundings. Even in the counties of New York and Kings, with their almost unlimited resources, the per capita weekly allowance for maintenance for their dependent insane has averaged from one to two dollars less than that provided for the state hospitals; while in the smaller institutions of the interior counties, aptly termed "poorhouse asylums", before their existence was happily terminated by the enactment of the State Care Law, the allowance for support was still more niggardly, they being conducted for the most part on a scale based on the minimum amount for which body and soul could be kept together. The lay keeper of one of the largest of these county establishments boasted to the writer that he maintained his insane patients for the munificent sum of ninety cents a week per capita. In connection with this subject may be mentioned a singular fact, and one that should have not a little weight in a consideration of the relative merits of the two systems, namely, that representatives of the state always display far greater liberality in appropriating moneys for charitable purposes than do local authorities. Experience has everywhere shown that the closer the relations between the appropriating power and the locality where the moneys so appropriated are to be expended for charitable purposes,

the more parsimonious the policy, a fact which has always proved disastrous to the welfare of the insane when under county or local control.

While we may freely concede that there are individual instances of county or municipal asylums which maintain an excellent standard of care, and consequently, that an indiscriminate condemnation of public institutions for the insane not under state control would be manifestly unjust, it must also be conceded that such instances are exceedingly rare—so rare, in fact, that they may be regarded as exceptions which “prove the rule.” Certainly not one such instance was found in the State of New York. Furthermore, it matters not how high a standard of excellence a county or municipal asylum may attain, there is the ever present danger of a retrogression through changes in management, likely to occur with every turn in the tide of local politics, as the history of substantially every county asylum will show, especially, if it happen to have a city population within its bailiwick; whereas, in the state hospitals and asylums of a large majority of the states, permanency in the management and in the tenure of resident officers is reasonably secure and not dependent on the favor of any political party, experience having abundantly shown that no institution for the care and treatment of the insane can be successfully conducted where partisan influences obtain. On the other hand, it is not claimed that the state hospital system as it exists to-day is perfect, or that it ever will be, for that matter. It is claimed, however, that the principle of state care is founded on the broad basis of science and humanity, and that when intelligently applied, it stands for all that is best in the present state of medical knowledge on the subject; whereas, county care is characterized, as a rule, by the warping limitations of parsimony coupled with abortive results of ignorance and partisan influences.

The term “state care for the insane”, as it is understood and applied in the state of New York, implies state provision and state maintenance for all of the dependent

insane in state hospitals, established and organized upon the following basis:

1. A division of the state by counties into hospital districts, the territorial extent of each district being determined by the number of insane to be provided for and the capacity of the hospital located therein.
 2. Each hospital to receive and care for all the dependent insane of its district, whether acute or chronic.
 3. A healthful, picturesque and accessible site with an abundant supply of pure water, good drainage and acreage sufficient for ornamental grounds and agricultural purposes.
 4. Well constructed and conveniently arranged hospitals buildings of a permanent character, equipped with modern sanitary appliances, as regards warming, ventilating, lighting, fire protection, cooking, bathing, etc., and structually adapted to the care of both acute and chronic cases.
 5. A skilled sufficiently large and liberally compensated medical staff, including a woman physician; also medical internes in each hospital as adjuncts to the regular staff.
 6. A corps of skilled nurses, trained in the hospital, in the proportion of not less than one to eight patients.
 7. A liberal and varied dietary.
 8. Sufficient and suitable clothing, bedding and furniture.
 9. Ample facilities in the way of medical and surgical appliances, also facilities for the industrial occupation, diversion and entertainment of patients.
 10. The selection and promotion of officers and employees in accordance with civil service principles, and a permanent tenure of office during fitness and efficiency.
 11. A uniform system of medical and financial records for all the hospitals.
 12. The removal of public patients from their homes or from poorhouses to state hospitals by trained attendants of the same sex, at the expense of the state and the statutory prohibition of all jurisdiction of superintendents of the poor over insane after they have been certified as such.
 13. The whole to be under competent state supervision and to be maintained by the state by means of a general state tax levied for that specific purpose.
- At the present time there are in the state of New York eleven state hospitals, exclusive of the one for insane criminals, in active operation, with a

daily population ranging from 500 in the smallest to 2,500 in the largest single institution and all organized substantially on the lines above indicated.

County care, as exemplified until recently in the State of New York, is characterized, on the one hand, by a lack of substantially all the above mentioned requisites for a state hospital, and, on the other, by the conditions of overcrowding, wretchedness, squalor and neglect so graphically depicted in the extract from the report of the State Charities Aid Association which is quoted in another part of this paper.

Respecting the county care system as it existed in the State of New York in 1889, the State Commission in Lunacy in its annual report for that year said: "The conclusion of the commission regarding the system of county care of the insane is that, however feasible in theory, in practical operation it has been found to have failed and fallen far short of the hope entertained for it when the act of 1871 sanctioning its trial, was passed. As a system it has developed inherent difficulties and defects which seem to be ineradicable and which make its successful operation in all essential respects impossible. Such being the case, it ought to be abolished and the policy of state care for all of the insane, both acute and chronic, should be re-established at the earliest practicable day. It cannot be said that the system of county care has not had a fair trial. It has been in vogue since 1871 under exceptionally advantageous circumstances. During all that time it has had the advantages of state supervision and yet it has failed to meet every reasonable or just expectation. If the system has been a failure for nearly twenty years, is it not reasonable to conclude that it is likely to be a failure for all time to come? It is not claimed that the system of state care as now conducted is perfect, but that it is steadily progressive, is humanely and intelligently administered, and that it represents all that is best in the present state of medical knowledge upon this subject; and whatever other criticism may be passed upon it, it certainly cannot truthfully be said that the inmates of the state hospitals are not comfortably housed, sufficiently clad, properly fed, provided with sufficient attendance and care, and given

medical supervision and treatment of an exceptionally high order."

The State Care Act, whereby the odious system of county care in the State of New York was finally annihilated, originated with the State Charities Aid Association, a voluntary, non-sectarian organization, founded in 1872 and composed of representative men and women of nearly every county of the state, whose worthy object is "to bring about reforms in our public institutions of charity through the formation of an intelligent, educated and organized public opinion. "To the untiring efforts of this Association, and especially to the chairman of its committee on the insane, Miss Louisa Lee Schuyler, on whose shoulders the mantle of Miss Dix, so far as regards the interests of the dependent insane in the state of New York, has so worthily fallen, is largely due the success of the movement which it originated and which finally culminated on April 15th, 1890, when the bill for state care and state maintenance of the dependent insane became a law by the formal approval of Governor Hill. This has been known ever since as the "State Care Act."

Referring to the condition of the insane, under the county care system, the State Charities Aid Association in its first annual report to the State Commission in Lunacy in 1893, among other things, says: "Very early in our history we were called upon to define our position and decide whether influence of the association should be thrown in behalf of State care or county care for the dependent insane. There was no hesitation. The memory of Miss Dix's earnest plea, of Dr. Willard's strong denunciation, of resolutions of medical societies and reports of legislative commissions, the traditions of the entire reform element of the State—all were to be found on the side of the removal of the insane from the poorhouses, of placing them under the care of the State. Stronger than any theory born of tradition was the testimony of the visitors of the association, as eyewitnesses of the sufferings of these poor and neglected people. Hungry and cold, sitting in the dark through the long winter afternoons and evenings, 'because light was too

expensive', cowering in cells, stifling in attics, without proper medical attendance, everworked on county farms, or brooding without occupation in crowded wards, ordered about by rough pauper attendants, they were of all beings most miserable. Shall we soon forget the insane man, crouching in a dark cell, so small that he could not stand up in it; or the woman, in midwinter, nearly frozen by the broken window, 'it was useless to mend it, she always broke it again'; or the one tablespoonful of fish and one potato, called a meal, while water spilled in the same room froze upon the floor; or the foul wrongs suffered by those unprotected women; such cruelties one can never forget. That the worst abuses were corrected in many places, as the years went by, is a matter of record, and yet, eighteen years after our visitors began to know what the inside of a poorhouse meant for the insane, as one reads the first annual report of the Commission in Lunacy, written in 1890, glowing with indignation as it recounts the sufferings of these poor people, one is surprised to find how little progress had been made in all those years. The system of poorhouse care has proved itself radically defective. Thank God! this horrible system is now a thing of the past."

The relative merits and demerits of the two systems can only be determined by a consideration of the general results of each, without reference to any particular institution, whether State or county. If it appears that the principle of state care is wrong, or that as a system it is inadequate, it should speedily be abandoned, no matter how great the outlay has been; and, logically, the same ruling would apply to county care, for it must be assumed that the people of every commonwealth are willing to provide for their dependent insane everything which medical science has determined to be essential for their proper care and treatment.

Among the objections raised by the advocates of county care was the contention that the state could not legally assume control of the dependent insane; that to do so without the assent of local governments would be a usurpation of the latter's constitutional right, as well as a violation of the principle of "home rule", the local authorities in one

county even going so far as to resist the order issued by the commission for the transfer of its insane to the state hospital by appeal to the courts, their contention being that the State Care Act, which required them to relinquish the control of their dependent insane to the state, was unconstitutional. Suffice it to say that the law was upheld in every court, from the lowest to the highest.

The State is defined by Woolsey as "a community of persons living within certain limits of territory, under a permanent organization which aims to secure the prevalence of justice by self imposed law." "The State," says Bluntschli, "is humanity organized."

That the State is sovereign in all matters which are not in conflict with the constitution and statutory laws of the federal government, and that in its sovereignty it may rightfully undertake any enterprise that it can better manage for the general good than can individuals, are well-established principles which have been universally recognized and accepted. The very word "State" involves the relegating of locality to the background for the public good. The State predominates because of a universally recognized necessity, amply attested by human experience, that localism for certain purposes must give way to prevent disorganization, and while we may concede in local affairs all that may properly be claimed for the principle of local self-government, there are interests with which only the superior powers and resources of the state can successfully cope. That the insane are peculiarly the wards of the state, holding a relation to it substantially similar to that of children to parents, and therefore not the wards of a county or of a township or municipality, is an equally well-established principle, which has repeatedly been enunciated by both common and statutory law and upheld by judicial decisions. Granting the tenability of the position here taken, and it is assumed that this will not be questioned, it logically follows that the state has the right at any time to assume the custody, control and supervision of her insane dependents, even though she may theretofore have permitted them, either in part or in whole, to remain under control of

municipal or county authorities. Furthermore, since insanity is a disease which, unlike every other, requires, as incident to its proper treatment, that the sufferer from it shall, as a rule, be deprived of his liberty, the state is justified in adopting special measures for the care and treatment of the insane, which would not be warrantable in regard to any other class of citizens.

"No state system for the care of the Insane", says Stephen Smith, "can be considered complete in all its details, which does not provide for an independent supervision of all of the insane and of the institutions devoted to their custody. This supervision should represent the sovereignty of the state in the relation of guardian to ward, and should be clothed with powers adequate to prevent wrongs and to secure the welfare of the objects of its care. This purpose can be effectually accomplished only by completely separating these institutions and their supervision from all other classes of public charities and organizing them on a basis which secures direct and independent supervision by the state."

The movement for state care for the dependent insane in the state of New York, which culminated in the enactment of the State Care Law in 1890 and which was finally consummated in 1896, by the conversion of the New York City Asylums for the insane, with their 7,000 inmates, into the Manhattan State Hospital, was really begun in 1836 when the legislature, in response to a petition from the State Medical Society for a suitable state asylum for the insane, established the State Lunatic Asylum at Utica, now the Utica State Hospital. Prior to that time the dependent insane, both acute and chronic, were kept in county and town poorhouses, there being no other public provision for them. Unfortunately, it was provided in the original charter of the Utica Asylum that patients who failed of recovery after a given period of time might be removed to the poorhouse, upon the superintendent's certificate that they were "incurable", or "not likely to be benefited" by further treatment in the asylum and could probably be made comfortable in the poorhouse." The inhumane practice of removing

these unfortunates from asylum to poorhouse, usually at the end of one year, continued under certain modifications, though with practically the same results, for upwards of half a century, or until the creation of the State Commission in Lunacy in 1889, and the enactment of the state care law in 1890; notwithstanding the establishment during this period of five additional state asylums, namely, at Poughkeepsie, Middletown, Buffalo, Willard and Binghamton, the latter two being for the chronic insane only. Thus, while the state had recognized the principle and, at least theoretically, adopted the policy of state care for its dependent insane, it had tolerated a system of county care in its worst form by permitting the removal from state asylums to county institutions, under the guise of incurability and harmlessness, the friendless, the violent, the filthy and infirm, and the feeble and helpless—the class of patients which above all others needs the fostering care and protection of the state. Under this pernicious system the so-called county asylums and poorhouses became filled to overflowing with insane patients whose "treatment" was limited to a mere pretense of custodial care.

The establishment in 1865, of the Willard Asylum for the Chronic Insane, now the Willard State Hospital, marked a second era in lunacy legislation, namely, that of *State Care for the Chronic Insane*, but largely failed of its object owing to delay in providing State accommodations for this class. It contemplated the removal of the chronic insane from all the counties to the custody of the State, excepting those in New York, Kings and Monroe counties, where regularly organized asylums had been provided. The general lack of accommodations in the state asylums furnished a basis for appeals to the legislature by county officials and others for exemption from the Willard Act, and exemptions were accordingly granted to several counties by special acts. The State Board of Charities, a body then having jurisdiction over the insane, also sought and obtained legislative authority to license counties to care for their chronic insane under such conditions as it might impose. Under exemptions granted by this board, a majority of whose then members

were advocates of separate provision for the chronic insane—either in state or county institutions, nineteen counties established so-called county asylums, which, with a single exception, were located adjacent to poorhouses, of which they were an integral part, being under the same management and on the same basis as regards medical service, and the standard of care generally. One of the worst evils of this system, aside from the wretched surroundings and care to which it consigned large numbers of the dependent insane, was the practice of receiving recent and presumably curable cases directly from their homes, which was a clear violation of law. Furthermore, it substantially pauperized all who failed of recovery after a year's residence in a state asylum.

Referring to "the pernicious legislation of 1871", the State Charities Aid Association, in one of its reports said, "County after county applied for and obtained exemption from the Willard Act. By October 1st, 1887, nineteen counties had thus been authorized to keep their milder cases of insanity. It is true these exemptions were granted by the State Board of Charities under promise from the counties 'to give their insane just as good care as the state gave'—promises, alas; never kept. No longer, as of old, were the chronic insane to go from poorhouse to state hospital, but from the state hospital to the poorhouse. Gradually, year by year, and so slowly that we scarcely realized it, the poorhouse officials were tightening their grasp upon these poor people, until suddenly we were confronted by the alarming fact that the supervisors of one third of the counties were arrayed in favor of the poorhouse system."

This was the condition of affairs when, in 1889, the State Commission in Lunacy was created, a step which gave a powerful impetus to the state care movement. To the commission, among other things, was transferred the power hitherto possessed by the State Board of Charities in the matter of granting exemptions from the Willard Act. It is needless to say that the commission promptly declined to grant any further exemptions to counties to care for their insane. On the contrary, in its first report to the legislature it laid bare the wretched condition of the county

institutions and their inmates which a single tour of inspection had vividly revealed, and recommended the abolition of the county care system and the transfer of the inmates of all the so-called county asylums to state hospitals, there to be maintained solely at the expense of the state.

This report, it is generally conceded, gave the death blow to county care in the state of New York. The proposition to provide state care and state maintenance for all of the dependent insane, which had previously been advocated by the State Charities Aid Association, was favorably received by a large majority of the people of the state. It was heartily endorsed and advocated by the press, with but few exceptions, while substantially all of the managers and superintendents of state hospitals gave it their cordial support.

Following this first report of the commission, the State Charities Aid Association, under the able leadership of Miss Schuyler, again and for the third time brought forward its bill for state care, and this time succeeded in passing it, in spite of "organized, vigorous and determined opposition emanating from supervisors and superintendents of the poor of exempted counties."

Of this law the American Journal of Insanity for April, 1890, says: "The State Care Bill, providing State care for all the dependent insane in the State of New York, became a law April 15, 1890. By signing this bill Governor Hill consummated one of the most signal triumphs ever achieved by humanity in the State of New York. All honor to those good men and women who have labored zealously day in and day out for the past three years to bring about this happy result. In the general rejoicing there will be no caviling as to who is entitled to the lion's share of the credit, though all must recognize the important part played in this great reform by the State Commission in Lunacy."

The important features of the State Care Act (Chap. 126, Laws of 1890) and of acts supplementary thereto, may be briefly summarized as follows: The abolition of separate institutions for the *chronic* insane; the designation of all the public institutions for the insane as state hospitals; the

division of the state into hospital districts, and requiring that each hospital shall receive all of the dependent insane within its district, whether acute or chronic; providing for the erection on the grounds of the state hospitals of additional buildings to accommodate the insane inmates of county asylums, then numbering nearly 2,300, at a per capita cost, including equipment and furniture, not to exceed \$550; requiring county superintendents of the poor and others of similar jurisdiction to properly prepare patients for removal to hospitals by seeing that they are in a state of bodily cleanliness and comfortably clad in new clothing throughout, in accordance with regulations made by the president of the commission; providing that the removal of public patients from their homes or from poorhouses shall be done by trained nurses sent from the hospitals, and that female patients, unless accompanied by relatives, must be removed by female attendants, the cost of removal in all cases to be borne by the state; that after such patients have been delivered into the custody of the hospital officials the care and control of county authorities over them shall cease; that thereafter no insane person shall be permitted to remain under county or municipal care, but all such shall be transferred to state hospitals without unnecessary delay, there to be regarded and known as the wards of the state; also absolutely prohibiting the return of any insane person from a state hospital to the care of county officials; requiring the commission, whenever deemed necessary to prevent over-crowding, to provide additional accommodations on the grounds of existing hospitals, or, if deemed more expedient, to recommend the establishment of additional state hospitals in such part of the state as in its judgment will best meet the requirements; providing that no money shall be expended by the managers of a state hospital for additional buildings or for extraordinary repairs and improvements, except upon plans and specifications approved by the commission; also, that no expenditure for any other purpose shall be made by the hospitals except upon itemized estimates approved by the commission; requiring the hospitals to submit to the commission monthly itemized estimates for their current

expenditures, these estimates to be revised by it as to quantities, quality and cost of supplies; requiring the commission to classify the salaries and wages of officers and employees of hospitals on a basis of uniformity for similar ranks and grades of employment, the schedules of salaries and wages to be approved by the Governor, Comptroller and Secretary of State; requiring uniformity in all official books and forms used by the hospitals; providing for the establishment by the commission of a pathological institute to be located in the city of New York and to be maintained for the benefit of all the state hospitals, the Director of the institution to be appointed by the commission, after a special civil service examination, at an annual salary to be fixed by it subject to the Governor's approval.

The legislature of 1895 discontinued the practice of making special appropriations for the hospitals, separately, for repairs, improvements, renewals and enlargements, by increasing the tax levy for the support of the insane sufficiently to cover all these purposes. It provided that the commission should supervise the expenditure of this fund to the extent of determining the respective needs of the hospitals from time to time and apportioning to each from the general fund such sums as it might deem necessary, the moneys so apportioned to be drawn and expended under special estimates to be approved by the commission. During the past year steps have been taken for the care of insane convicts apart from patients held on criminal orders, by providing for the erection of a suitable hospital building for insane convicts, on the grounds of one of the state prisons. This will remove from the Matteawan State Hospital a most troublesome class of inmates and at the same time relieve its seriously congested condition.

Since the passage of the State Care Act, in 1890, the three county asylums that were exempted from its provisions, namely, Monroe, Kings and New York City, have been acquired, and now constitute, respectively, the Rochester, Long Island and Manhattan State Hospitals. A second homeopathic State hospital has also recently been established at Collins, Erie county, thus making, in all, exclusive of

the Matteawan institution, eleven state hospitals with a population, in round numbers of 20,000 patients and 3,500 officers and employees.

The approval by the Governor in May, 1896, of the bill entitled "The Insanity Law", has placed upon the statute books a consolidated revision in one comprehensive act, of all pre-existing laws relating to the insane.

The Insanity Law consists of five main divisions or "Articles". Article 1 defines the meaning of the terms poor person, indigent person, patient and institution, as used in the act. It also defines the method of appointment, qualifications, terms of office, salaries and allowances, and powers and duties of the commissioners in lunacy. Article 2 defines the titles of and reorganizes the existing state hospitals on a substantially uniform basis, as regards the numbers and powers and duties of managers, the powers and duties of superintendents, stewards and treasurers, and the monthly estimates and methods of expenditure and accounting. It also provides for the licensing of private institutions by the commission. Article 3 relates to the commitment, custody and discharge of the insane. Article 4 pertains to the organization and management of the Matteawan State Hospital for Insane Criminals and the commitment to and discharge of patients therefrom. Article 5 enumerates the laws repealed and provides that the act shall take effect July 1st, 1896.

One of the commendable features of this new law is that it definitely defines the powers and duties of supervisory and administrative officers, and distinctly fixed the responsibilities of each class, including the commissioners in lunacy, boards of managers, superintendents, stewards, treasurers and all officials having to do with the commitment of the insane.

The commission in lunacy is charged with the execution of the laws relating to the custody, care and treatment of the insane, not including feeble-minded persons and epileptics, as such, and idiots. It is required, among other things, to maintain an effective visitation and inspection of all institutions for the insane, both public and private, to examine into their methods of management, the condition of

the buildings and grounds, the books and records stores and food supplies and the general and special dietaries; also to determine the fitness of officers and employees for their respective duties; to see, as far as practicable, all the patients, to grant private interviews to such as require it and to inquire into complaints, if any be made. To this end the commissioners are given free access at all times to the grounds and buildings and to all books and records of the institutions; and all persons connected therewith are required to give such information and afford such facilities for examination or inquiry as the commissioners may require. The commission is further authorized to make such recommendations respecting the management or improvement of the institutions as it may deem necessary or desirable, and to approve, as to form, the books of record and blanks for official use, which shall be uniform for all the hospitals; also, to make such regulations respecting the correspondence of the insane in custody as in its judgment will best promote their interests, but patients shall be allowed to correspond without restriction with the county judge and district attorney of the county from which they were committed.

The commission is empowered to define the hospital districts and to modify the same from time to time to meet the requirements of the service. It is required to keep a record in its office of all qualified examiners in lunacy and of all admissions, discharges, transfers, etc., of patients in the various institutions for the insane. It is also required to establish a pathological institute and to appoint a Director thereof who shall, under its direction, perform such duties relating to pathological research as may be required for all the State hospitals.

The governor is empowered to appoint, with the advice and consent of the senate, a board of managers for each hospital consisting of seven members, all of whom shall reside in the hospital district. The managers of the two homeopathic hospitals, however, may be appointed from any part of the state; also, the Middletown Homeopathic Hospital is permitted to have thirteen managers.

Subject to the statutory powers of the commission the managers are given general supervision and control over their respective hospitals. They are required to take care of the general interests of the hospital and to see that its design is carried into effect according to law and to its by-laws and rules which they may make. They must maintain an effective inspection of the hospital, visiting it at regular intervals for that purpose; keep a record of their proceedings, and send a copy of the same to the commission within ten days after each meeting; and make a report to the commission in October of each year, instead of annually reporting to the legislature as heretofore. Appointments by managers are limited to superintendents and treasurers. Each board of managers is empowered to appoint, subject to civil service rules, as often as a vacancy occurs, a superintendent who shall be a well educated physician, a graduate of an incorporated medical college, and of at least five years actual experience in an institution for the insane. The superintendents and assistant physicians of homeopathic hospitals for the insane shall be homeopathic physicians, but such physicians shall not be eligible to appointment in or transfer to state hospitals that are not for homeopathic treatment. Superintendents and treasurers of state hospitals are subject to removal by a vote of a majority of the board, for cause stated in writing, and after an opportunity to be heard.

Superintendents are empowered to appoint, subject to civil service rules and without confirmation by the managers, their co-resident officers and all subordinate employees, the number of each class to be determined by the commission; also, to remove any resident officer for cause stated in writing, after an opportunity to be heard. He may discharge any of his subordinate employees in his discretion.

The granting to superintendents of this power of appointment and removal of subordinate officers and employees recognizes a principle for which the commission in lunacy has long contended. In its first report (1889) under the head of "Official Responsibility" it said: "The superintendent or chief medical officer of every asylum should be

clothed with the absolute power of appointment and removal of all officers subordinate to himself. It is doubtful if the best results can be obtained under any other system. As the law now stands, boards of managers or trustees of the state asylums have the power of appointment of the superintendent. The power is also given to them to appoint, on the nomination of the superintendent, all of the resident officers, that is, the assistant physicians, steward and matron; and while the superintendent may, for cause, temporarily suspend a resident officer, the right is reserved to the managers to confirm or disapprove such suspension. Instances are not wanting of discord between the superintendent and resident officers. This is not as it should be. The superintendent should be held to a strict accountability for the acts of his subordinates; but he cannot be so held unless he is possessed of the power of appointment and removal. The existing method tends to weaken discipline, to produce a want of harmony, and to create constant friction. The superintendent is appointed on the theory that he is competent for the position. If he is competent, he should be allowed to select and remove his subordinates. If he is not competent, he should not hold the position."

Under the new law the superintendent is the chief executive officer of the hospital, and, subject to the rules and regulations established by the managers, has the general superintendence of the entire hospital and its equipment, and the direction and control of all persons therein. He is required to maintain an effective supervision of all parts of the hospital, and to generally direct the care and treatment of the patients. To this end he must personally examine each patient within five days after admission, and regularly visit all the wards or apartments for patients at such times as the rules of the hospital shall prescribe. He shall also establish and supervise a training school for nurses and attendants.

Superintendents, or their representatives (first assistant physicians or stewards) are required to meet the commission in monthly conference at its office in Albany to consider the

hospital estimates and other matters relating to the care and maintenance of the hospitals.

The steward, under the direction of the superintendent, shall make all purchases and be accountable for the careful keeping and economical use of all stores and other articles belonging to the hospital.

Perhaps the most radical change created by the new law is that which relates to the commitment and detention of the insane, a change which doubtless owes its origin to the popular delusion that commitments of sane persons to institutions for the insane are of frequent occurrence. This change, it is proper to say, was neither suggested nor approved by the commission in lunacy, nor, as far as the writer is aware, by any of the hospital superintendents. Furthermore, there was no demand for a change among the general medical profession. On the contrary, it was generally conceded in medical circles, and especially by those who are engaged in the care of the insane, that the supplanted method afforded ample protection from danger of commitment of sane persons through wrongful intent or corrupt collusion. The former method of commitment was by the certificate of two qualified examiners approved by a judge of a court of record, discretion being lodged in the court to require further evidence of insanity, or to call a jury to determine the question. The writer, in his official capacity, has examined thousands of cases of alleged illegal detention without finding one in which the allegation was well founded. Moreover, during a period of twenty-six years of professional and official connection with institutions for the insane in the state of New York, not a single authenticated instance of the commitment of a sane person, from bad motives, has come to his knowledge. And while it may be said that mistakes in the diagnosis of insanity, as in other diseases, occasionally occur, such mistakes are exceedingly rare, as shown by the hospital records, and, when made, are speedily discovered and corrected. In connection with this matter, attention is called to the fact that under the new law, the commitment becomes a judicial order instead of being, as heretofore, a mere approval by the judge. This should afford a protec-

tion to medical examiners against damage suits for "false imprisonment" or malpractice.

Under the new law no person can be committed to an institution for the insane except upon an order of a judge of a court of record, such order being granted upon a verified petition containing a statement of facts upon which the allegation of insanity is based, and a certificate of lunacy signed by two qualified examiners in lunacy. Notice of application for the order of commitment must be served upon the person alleged to be insane, at least one day before making the application, but the judge may dispense with such personal service or may direct substituted service to be made upon some other person to be designated by him. He may also, in his discretion, require other proofs in addition to the petition and certificate of the medical examiners, or a hearing may be had by the judge to whom the application is made upon the demand of any relative or near friend of the alleged insane person. Furthermore, if the person alleged to be insane, or any friend in his behalf, is dissatisfied with the final order of the judge or justice committing him, he may, within ten days thereafter, appeal therefrom to a justice of the supreme court other than the one making the order, who *shall* cause a jury to be summoned and try the question of insanity in the manner as in proceedings for the appointment of a committee. This provision for appeal, it is feared, will be likely to prove a troublesome feature of the new method of commitment, for the reason that it involves a publicity from which the friends of insane persons will naturally shrink, and thus deprive the latter of the benefits which only prompt treatment in a hospital would afford. Besides, it removes the determination of a grave medical question, especially in obscure and difficult cases, from presumably competent physicians and places it in the hands of a jury of laymen. There is one redeeming feature, however, in this provision for appeal from the order of commitment, namely, that before such appeal shall be heard, the person making it shall make a deposit or give an approved bond for the payment of costs of the appeal, of the order of commitment is sustained. Another feature

of the law which it is feared will tend to delay the taking of steps for the commitment of patients, except in cases of markedly manifest insanity, is that, in case the alleged insane person is determined to be not insane, the court may charge the costs of the proceedings to the persons making the application for the order of commitment.

Finally, it must be admitted that the new law as to commitments embodies many desirable and commendable features, as a careful perusal of it will show. It is not impossible that experience in its practical operation will demonstrate that its objectionable features are far less harmful than was anticipated; and if its operation should result in dispelling the groundless belief which now obtains in the public mind respecting the ease and frequency with which sane persons are incarcerated and detained in institutions for the insane, its defects may well be overlooked.

Having thus cursorily outlined the legislation had for the insane in the state of New York since the creation of the commission in lunacy in 1889, it is pertinent to inquire into the results of this legislation, both as regards the welfare of the dependent insane and the interests of the taxpayers. In other words, what beneficial results, if any, have been attained in the general care and treatment of the insane, and in the methods of management and condition of the hospitals established and maintained for the care of this unfortunate class of citizens; also, what benefits have the taxpayers derived from the substitution of state for county care of their dependent insane?

Among the more important improvements as regards methods and conditions, which have accrued to the institutions for the insane and their government under the new order of things, may be mentioned the following:

1. A complete registration in the office of the commission of all qualified examiners in lunacy.
2. A complete registration of all persons committed to institutions for the insane, both public and private, with data as to condition, status, results of treatment, etc. The registration already embraces about 35,000 cases of insanity from which intelligent deductions, as well as comparisons in treatment, cost,

etc., in the various hospitals may be made. Valuable information is thus made readily available which heretofore could not be obtained from a single source, nor without great difficulty. The collection of this information has been greatly facilitated by the adoption in the institutions of a uniform system of records and statistical returns. 3. Provision for the transfer, by order of the commission, of patients from one institution to another without recommitment. This elastic feature of the State Care Law enables the commission to locate patients in hospitals which are most accessible to their friends; also, to equalize the pressure for accommodations in the state hospital system. 4. Limiting the maximum charge for private patients in state hospitals to ten dollars per week, and providing that no patient shall occupy more than one room, thus securing to the insane "the greatest good to the greatest number" and, at the same time, doing away with class distinctions which were formerly a source of much complaint. 5. A successful effort to induce or compel friends of patients who are legally liable therefor to reimburse the state for the support of such patients. From this source, in one year, at a cost of about \$4,000, the commission through its agents, collected the sum of \$60,000. Formerly many patients who were abundantly able to pay were committed to the hospitals by county officials as public patients, the incentive being political or other influences. 6. The adoption of regulations for the removal of patients from their homes or from poorhouses to the hospitals, which require that all public patients on delivery to the state shall be in a condition of bodily cleanliness, and clad in new and comfortable clothing throughout. This requirement, the propriety of which will be obvious to experienced minds, has recently been contested by the Charities commissioners of New York city, on the ground that it was unnecessary and unreasonable. The higher courts decided that it was both proper and reasonable. 7. The removal of patients from their homes, or elsewhere, by trained attendants sent from the hospital, women patients, in all cases, to be accompanied by a woman attendant or nurse. The observance of this rule insures both decency

and humanity in bringing patients to the hospitals, besides effecting a large saving in cost as compared with the former method of transfer by county officials. 8. Removal of the legal distinction between acute and chronic insanity by designating each state institution for the insane as "Hospital" instead of "Asylum" and organizing them all upon a curative basis, thus inculcating the hospital idea. The abolition of this distinction has had a most beneficial effect upon the inmates of those institutions which were formerly set apart for the chronic insane, as well as upon the interest and zeal of their medical officers and nurses as attested by their superintendents. 9. A regulation regarding the correspondence of the insane, which provides that each patient who desires, may write at least once in two weeks; letters, for any reason, not forwarded to destination must be sent to the office of the commission for examination; letters addressed to officials in the State having jurisdiction in lunacy cases must be forwarded to them unopened. This rule is designed to disarm the criticism that is so often made respecting alleged suppression of patients' correspondence by hospital officials, and at the same time to afford patients who regard themselves as illegally detained or ill-treated, an opportunity to communicate, through proper channels, with the outside world. 10. Provision for paroling patients under certain conditions for a period of thirty days, during which they may be returned to the hospital without recommitment. This affords opportunity for testing the fitness of certain patients for final discharge, and to others for occasional visits at home. 11. A regulation requiring that patients on admission to a hospital shall be immediately informed of the nature of the institution, and the fact that they are detained there under legal commitment. 12. The opportunity which the law affords to all patients of a hearing by the visiting commissioners apart from any officer of the hospital. 13. A rule restricting the issuing of licenses to conduct private asylums to reputable physicians of experience in the care and treatment of the insane. 14. The general adoption in the hospitals and private institutions for the insane of a uniform dress for nurses' and attendants'

wear. 15. Provision for the clinical teaching of insanity in the state hospitals, by admitting to the wards thereof students of medical colleges situated in their vicinity, as well as of practising physicians who may desire the opportunity of clinically studying mental diseases, under such restrictions as the superintendents may impose. Under this rule seven medical colleges now avail themselves of the facilities offered by the hospitals for clinical teaching. Also the establishing of a quarterly bulletin, conducted mainly by the superintendents and designed to represent the clinical and pathological work of the state hospitals and of the pathological institute. 16. Provision for the appointment of medical internes in each of the state hospitals in addition to the regular medical staff, thus providing a training school for medical officers from which the regular medical staff may be recruited. 17. A civil service regulation requiring competitive examinations for appointment of resident officers in state hospitals. This provision has resulted in removing all of these positions from partisan influences, and opened the way for promotion, by merit, of experienced assistant physicians and other worthy officers. It is believed that the letter and spirit of civil service requirements are more carefully observed in the state hospitals than in any other department of the state government, and that under its operation the hospitals are as free from partisan influences, both in the matter of appointments and in the tenure of office during efficiency and fitness, as it is possible to have them under a republican form of government. 18. A material increase in the average rates of salaries and wages of all grades of service, also an increase in the proportion of medical officers, nurses and attendants, including a woman physician on the staff of each hospital. The schedule of salaries and wages recently fixed by the commission provides, in nearly all cases, for promotion in pay at regular intervals and independently of favoritism. 19. The gradual introduction of women nurses on the men's wards, such nurses to be paid the same wages as men. 20. A material extension of accommodations for attendants and nurses in detached buildings and the employ-

ment of a corps of night nurses, especially in the care of disturbed and filthy patients. 21. The establishment of training schools in all the state hospitals, with a scheme of examinations to be conducted by a committee of superintendents, which shall be alike for all the hospitals. 22. Provision for the employment of dentists for patients whose teeth the medical officers may determine to be in need of such attention. 23. Provision for ophthalmological examinations by specialists in that department of medicine. 24. An allowance of \$100 per annum to each hospital for the purchase of medical books; also, a liberal and varied subscription list to medical journals, magazines and other periodicals for the benefit of the medical staff and others. 25. An effort to improve the cooking and serving of food, by the employment of a chef in each state hospital in addition to the ordinary corps of cooks, whose duty it shall be to generally oversee the cooking in the various kitchens, and to instruct the subordinate cooks and trained nurses in the preparation of food. 26. The adoption of a schedule of food supplies, prepared by Professor Austin Flint, including a per diem ration allowance of each article. This schedule is designed to serve as a basis for the hospitals in estimating for such supplies, and also as a guide for the commission in its revision of such estimates. It should be understood that this schedule refers only to staple articles of food such as are in daily use, and does not include fruits of various kinds and many other articles of food which are regularly allowed in the monthly estimates; neither does it include "special" or "extra" diet for the sick and feeble, which may be prescribed in the discretion of the medical officers. It has been the aim of the commission, within the limit of funds at its command, to encourage the purchase of a better quality of food supplies generally, and to this end, in its conferences with the superintendents, its practice has been to insist upon a higher grade of such supplies whenever the grades called for have seemed to be below standard, especially as regards beef, butter, flour, sugar, tea, coffee, etc. 27. A marked improvement in the methods of bathing, by the introduction in nearly all of the hospitals of "rain" or

"spray" baths; also the introduction of hand-towels in the convalescent wards and other sanitary comforts and conveniences. 28. A requirement that, so far as the commission may deem it feasible, the hospitals shall enter into joint contracts for the purchase of staple articles of supply, through competitive bids; the contracts to be let to the lowest responsible bidders.

Respecting what has been accomplished in the direction of improvement in the hospitals themselves and for the promotion of the welfare and comfort of their inmates, as a result of the adoption of the policy of state care, a perusal of the annual reports of the hospitals will show that the condition of these institutions, as regards organization, equipment, sanitary condition, fire protection, clothing and furniture, food supplies, discipline, nursing, means of diversion and occupation, and medical service has been steadily progressive, and that the standard of care generally is materially higher than it was prior to the enactment of the State Care Law.

The superintendent of the Binghamton State Hospital in his report for 1893, refers to the improved conditions in that hospital under the new system, in the following striking language:

"Analysis of the table showing the causes of death, and comparison with similar tables for preceding years, affords extremely gratifying results. The reduction in the death rate is not only gratifying when computed on the number admitted, but is also highly satisfactory when based on the average daily population, for on this basis, during the past ten years, it has fallen from 11.73 per cent in 1883 to 6.35 per cent in 1893. The question naturally arises: To what is this remarkable improvement due? To you who have seen the institution grow from a poorly equipped, crudely furnished, poverty-stricken asylum for the chronic insane into the splendid hospital of to-day, supplied with modern sanitary appliances, provided with good food and raiment for its patients, diversified occupation and amusements to engage their hands and minds, and kind nurses to watch over them, the question needs no answer. Im-

proved surroundings, humane care and treatment, freedom from mechanical restraint, and the largest personal liberty consistent with safety, are the agencies through which the change has been accomplished. Up to the year 1890 it was with exceeding difficulty that the bare necessities of life could be procured for our patients, but when in that year the State Care Bill became a law, this hospital, scarcely recognized by its sister institutions, was suddenly galvanized into life, and under the beneficent provisions of that act it received a new impetus which enabled it to rise rapidly to a high rank in the State. Under the old law anything was good enough for the broken down, chronic cases it sheltered; under the new law the arbitrary distinction between acute and chronic insanity was legally annihilated, and the doors of the hospital were opened to all for whom admission was sought from the eight counties constituting the district assigned as its bailiwick."

In 1893, the legislature enacted a law providing a general appropriation for the support of the state hospitals as provided in the State Care Act, and putting upon the commission the responsibility of supervising the expenditures of the hospitals through a system of itemized monthly estimates to be formulated and revised by it. It was not to be expected that when the state should assume the entire expense of maintaining the hospitals, involving an annual outlay of millions of dollars, it would continue the former method of expenditure by local officials with practically no uniform system and without supervision by some central authority which should be independent of local influences. In other words, when the policy of the state became fixed in respect to paying the whole cost of maintaining its dependent insane, it became self-evident that the former financial methods could not be adapted to the new conditions and, consequently, that the need of some central supervision and control of the moneys to be expended for that purpose would be imperative.

In entering upon the work of supervising the expenditures of the state hospitals the commission was deeply impressed with its duty to the dependent insane, on the

one hand, and with its responsibility to the taxpayers on the other. It also realized that it must necessarily encounter difficulties in the beginning, in putting into practical operation a new law which necessitated an entirely new financial system, involving a radical departure from methods which had been sanctioned by long usage and time honored custom, and under which the funds received by the hospitals from various sources were expended under the supervision and audit of local boards of managers.

In the inauguration of the new system it was inevitable that misunderstandings and friction between the commission and the hospitals should arise. The superintendent of the Utica State Hospital, in his report for 1893, pointed out this danger in the following most prophetic language:

"The transition from the old order of things to the new will not be accomplished without friction. Soon, however, the machinery must adjust itself to the new requirements. And surely one may safely leave the future to take care of itself, if, in meeting the new problems that will arise, we pause to ask ourselves the simple question whether the end we have in view is the application to our every day work among, and in behalf of, the insane of the humane principle that underlies the State Care Act, and which alone made its passage possible."

It would also be surprising if, in the application of a financial system of such vast magnitude and involving such wide spread interests, mistakes in minor details should not have been made by the body having the matter in charge. That such mistakes were made the writer freely admits, but he believes that with the better understanding of things which has come about between the hospital authorities and the commission, now that the new financial system is in successful and practically frictionless operation, no one who is conversant with the situation to-day and with the results attained, would deny that the policy of the commission, as a whole, has been a commendable one. Furthermore, it may be said that the present method of expenditure and accounting, as embodied in the system of itemized monthly estimates, now that it is fully understood, is acceptable to

substantially all of the hospital superintendents. In fact, several of the superintendents have assured the writer that they would not desire to return to the former methods if they were permitted to do so. It is not claimed that the new system is, unlike other human agencies, without imperfections. It is claimed, however, that its already demonstrable advantages over the system which it superseded are so great as to convince even the most skeptical of its former opponents of its superiority in both its humane and its financial aspect.

The following excerpt from the report of the superintendent of the Binghamton State Hospital for 1895, not only reflects the views of superintendents in respect to the new method, but indicates the status of existing relations between the hospitals and the commission:

"The operation of the hospital under the State Care Law has been highly satisfactory. Difficulties incident to the experimental stage of a new system have disappeared, and the friction which at one time threatened serious complications has entirely subsided. The new financial scheme inaugurated by the State Commission in Lunacy has been found not only practical but much more systematic and convenient than the method previously in use. The great powers vested in the commission under the new law have been wisely exercised and it is pleasing to be able to record that many of the supplies that the hospital has obtained under the estimate system have been superior in quality to articles of a similar kind previously used. This has been notably so with such articles as beef, butter and sugar. During the entire year we have used none but Chicago dressed beef in carcasses of not less than 600 pounds and of the best quality. Our butter has been made by the separator process and has been purchased directly from the best creameries. The use of brown sugar has been entirely discarded and in its place only white granulated sugar is now used. With our cold storage buildings equipped with refrigerating apparatus enabling us to keep the meat rooms near the freezing point, the butter room at a much lower temperature, and the fruit rooms at any desired degree of

cold, we have been able to preserve perishable provisions and to save considerable money by purchasing when prices were low."

The superintendent of the St. Lawrence State Hospital, for the same year, says:

"Our relations with the State Commission in Lunacy during the past year have been harmonious and pleasant. The new system of supervision of accounts has become a matter of no embarrassment and very little friction and seems to work very well."

Anent this subject the superintendent of the Utica State Hospital, in his annual report for 1895, under the head of "Official Relations," says:

"Relations with the seat of government, through the State Commission in Lunacy, have become more intimate in proportion as successive acts of the Legislature have involved a growing centripetency. It is a pleasure to note a nicer gearing of the parts of this vast and complex piece of machinery and to experience the employment of ball-bearings, as it were, where formerly there was some friction in transmitting motion. Official visitation was had by the Commission in Lunacy on October 13, 1894, and May 18 and 23, 1895, and on my part frequent communication (almost daily by letter and monthly by conference) has been had with the office of the Commission in Albany."

In concluding this subject, it is gratifying to be able to state that the prevailing opinion among superintendents and the commissioners in lunacy to-day in respect to the monthly conferences between the two bodies at which various questions respecting methods of management are freely discussed—and many of them practically determined by the superintendents themselves—is, that these conferences have been productive of great good to the hospitals, as well as to the commission; also that they have finally resulted in the establishment of harmonious relations between the superintendents and the commission, which was, "a consummation devoutly to be wished."

Respecting the benefits derived by the taxpayers from the new methods, it may be stated that the total sav-

ing effected by the estimate system in its first year amounted, in round numbers, to \$300,000 over the previous year under the old system. In other words, the per capita cost of maintenance for the fiscal year 1892-3, exclusive of surplus funds expended by the hospitals just before the estimate law went into effect, was \$216.12; whereas, in 1893-4, the first year under the estimate system, the per capita cost dropped to \$184.84, a reduction of \$31.28. Multiplying the daily average number of patients by the last sum makes the difference \$275,453.68, which added to the item of \$25,000 paid by the state for transportation of patients from their homes to the hospitals—an expense not borne by the hospitals under the former system—makes a total of \$300,453.68. These figures apply only to the eight state hospitals then in existence, the support of the asylums of New York and Kings counties, containing approximately one-half of the dependent insane, not having as yet been assumed by the state.

The new constitution which was adopted by a decisive vote of the people of the State of New York in 1894, and which became the organic law of the State, January 1st. 1895, elevated the commission in lunacy to the dignity of a constitutional body, thereby placing it beyond the power of the legislature to terminate its existence, and vested in it exclusive jurisdiction over all institutions for the insane, both public and private, a jurisdiction which theretofore had been jointly vested in the commission and the State Board of Charities. The adoption of this constitutional provision must be regarded as a final recognition by the people of the necessity of placing the supervision and control of their insane and the institutions established for their care and treatment upon a more substantial and comprehensive basis than had theretofore obtained, while at the same time securing to this class of dependents a more enlightened and humane system of care, as well as greater protection against possible wrong in their commitment and detention, by completely and permanently separating them from other objects of the state's charities, and providing for their supervision by a central authority which shall be independent of local

influence and clothed with practically plenary power to remedy defects or abuses whenever and wherever such may be found to exist.

Thus the people of the state of New York, actuated by the conviction that "nations are never impoverished by the munificence of their charities", have finally and unequivocally determined and provided for the control and care of all their insane who are unable to obtain private care, through a well-devised, permanent and comprehensive system of state supervision and state maintenance—a system which contains within itself the essential elements of self-perpetuation and practically unlimited extension, and which makes it obligatory upon all counties, as well as to their financial interests, to place all of their dependent insane in state hospitals under the absolute control of the State.

NERVOUS SHOCK AND DISEASE OF THE NERVOUS SYSTEM AS A CAUSE OF PERNICIOUS ANEMIA.*

By JAMES B. HERRICK, M. D., Chicago, Ill.

IT is the object of this paper to direct attention to nervous shock or disease of the nervous system as a possible, or probable, exciting cause of grave or pernicious anemia. My attention was called to the relations between these conditions by the following case:

The patient, Mrs. M., white, 63 years of age, claimed to have been in good health up to November, 1893. She had rosy cheeks, was plump, weighed 137 pounds, led an active, busy life as a quasi-practitioner of medicine. She scarcely knew what it was to be confined to bed save when children were born, five of whom she had brought into the world alive and healthy. She had never miscarried and there was no other evidence leading to the suspicion of syphilis. Her father had lived to the age of 87, to die an accidental death. Her mother succumbed to pleurisy at 63. One brother had died from some cardiac trouble and one sister from asthma. Two brothers and one sister were living.

In November, 1893, she fell on the sidewalk, hurting her back and left side. To use her own words: "The hurt extended from the back of the neck down the left side and left leg." She walked home, but from the time of this injury she found herself weaker, both physically and mentally. She was obliged to lie down the greater part of the day, and thought she was becoming paralyzed. Soon the legs began to bloat; and she would, upon sitting up for a

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short time, feel dizzy and perhaps faint. The patient became unable to walk for any great distance; had difficulty in picking up small objects such as a pin. The skin became paler: the appetite, notwithstanding, remained good; the bowels were constipated. She was often quite thirsty.

On admission to the Presbyterian Hospital June 30, 1894, her complaint of somewhat vague pain, of weakness of the arms and legs, and mental deterioration, for all which she assigned the injury as the efficient cause, coupled with the fact that there could be discovered on evidence of organic lesion to account for such phenomena, and also that she referred often to a \$2,000 accident insurance claim that she had placed in the hands of a lawyer for collection, all this aroused a suspicion of exaggeration of symptoms as in railway spine, if not of malingering.

The increasing pallor of the skin led later to an investigation of the blood and a more thorough examination of the patient. I condense the results of several examinations.

Physical Examination Nov. 8, 1894.—Skin and mucous membranes of a lemon-yellowish white. Conjunctivæ show light yellowish tinge. Skin is dry, wrinkled, panniculus adiposus scanty. Patient talks rather slowly, as if taking a long time for framing answer and separate words. Speech reminds one of scanning speech of insular sclerosis. She moves hands and legs slowly and somewhat uncertainly; appears weak and unable to walk or stand unsupported; complains of great dizziness on being put in erect posture. Hair is gray, thin and falling out fast; ears and nose negative; tongue pale, flabby, not tremulous, protruded in median line; fetor *ex ore*; frequent spasmodic contraction of lower portion of orbicularis palpebrarum. Right eye beginning cataract; numerous retinal hemorrhages; left eye, retinal field practically the same, in right eye six hemorrhagic areas counted, in left twelve. The existence of retinal hemorrhages was confirmed by Dr. Albert Hinde, who kindly examined the eye for me. External jugular pulsates synchronously with apex-beat as does a vein (probably a perforating branch of the internal mammary) running just to the right of the sternum and parallel with it for its upper one-quarter.

The chest is slightly flattened, of moderate length, intercostal spaces rather wide; respiratory movements regular, fairly deep, eighteen to the minute. Apex-beat faintly seen and felt in the fifth interspace just inside the left mamillary line; palpation otherwise negative. Percussion reveals no increased area of cardiac dulness. Pulmonary resonance on the right side in the mamillary line on expiration as low as to the sixth rib, on inspiration over seventh rib. Respiratory sounds are normal save an occasional moist rale; (in the last two days has "taken cold"). Systolic blowing is heard over entire precordia, best at apex; systolic hum also over vessels of neck. Abdomen is flabby, marked with lineæ albicantes; occasional peristaltic movements in region of umbilicus and to right of same. Edge of liver is felt very indistinctly about one inch below costal arch; inguinal glands are palpable but not perceptibly enlarged. No tumor mass or point of tenderness is found on palpation. Liver dulness is heard in median line, one-half way between ensiform cartilage and umbilicus; area of splenic dulness increased in posterior axillary line reaching as high as to the eighth rib; Stomach resonance apparently increased in area. Stomach reaches below umbilicus (gastrophtosis); it appears moderately enlarged. Lesser curvature apparently made out between ensiform and umbilicus. After test breakfast (Ewald) no free HCl, no mucus, no remains of previous meal are present; pepsin uncertain; no lactic acid by Uffelman's test. Lower extremities are moderately edematous; rectum negative, no parasites in stools; pelvic organs negative: bones negative, no tenderness. No evidence of organic or local nervous lesions can be made out. Sensation seems to be perfect, the reflexes normal. There is no paralysis. The bowels are inclined to constipation. There is no great frequency of urination, no difficulty in urinating, or irritation from urine. Movements of muscles are slow and feeble, not coördinated with certainty. Raises dynamometer to 10 with either hand. Urine is 1012, 30 to 50 ounces; no albumin, no sugar; solids, 660 grains; no formed elements. Blood is pale: marked poikilocytosis, microcytes and macrocytes; few nucleated red; megaloblasts,

i.e., the large nucleated reds, few; leucocytes increased relatively; many lymphocytes; number of red globules to cubic millimeter 655,666; hemoglobin (Fleischl) 25 per cent.; no parasites. I desire to acknowledge the kindly aid of the late Dr. D. D. Bishop. Several of the numerous blood examinations were made by him.

A temperature chart showing a range from 97° to 102° F. is here omitted.

The patient remained in the hospital, though not under my immediate observation, until the middle of the summer 1895. On increasing doses of arsenic there was a perceptible improvement, both as regards the subjective and objective symptoms. There was less dizziness, more certain movements of the hands and legs, clearer mind, greater strength. The blood count gradually changed so that on March 22, 1895, the hemoglobin was 80 per cent. and the red corpuscles 2,575,000, with no increase in the white. A severe attack of bronchitis or influenza seemed about to carry off the patient, but she rallied from this and finally left the hospital at her own request. I am unable to state facts concerning her subsequent history.

The case was seen by several physicians and all failed to locate any organic cord or brain lesion or any malignant growth.

The intense pallor of the skin, the subjective sensations of dizziness and palpitation, the great mental and bodily weakness, the retinal hemorrhages, the anemic murmurs, the enormous reduction in the number of red corpuscles with such marked variations in their form and size, the presence, though in small numbers, of nucleated corpuscles, the increased globular richness in hemoglobin, the corpuscles being reduced to 13 per cent., while the hemoglobin was reduced to but 25 per cent., the continued irregular fever, the temperature ranging from 97 to 102 F., gave an almost typical symptom-complex of the so-called progressive penicious anemia of Biermer, or the primary essential anemia of Addison. Enlargement of the spleen and liver have been often noted in these cases as well as venous pulsation.

But many cases clinically perfect as progressive and

pernicious in character and apparently due to some primary disease of the blood or of the blood-making organs, have been found postmortem to have some organic lesion overlooked during life that should be regarded as primary. Thus a hidden carcinoma, an intestinal blood-consuming or toxin-producing parasite, as the *ancylostomum duodenale* or the *bothriocephalus latus*, an atrophy of the gastric and intestinal glandular structure may explain an apparently primary anemia. Some authors incline to put these cases in the category of the essential anemias because of the predominance of blood changes and blood symptoms. Thus Eichhorst says that only those deuteropathic or secondary anemias are to be regarded as progressive pernicious anemias where there is a great disproportion between cause and effect. (Bd. IV, S. 22), A case, therefore, of atrophy of the stomach or of *ancylostomum* disease where the symptoms of the anemia completely overshadowed those of the primary trouble he might class as progressive pernicious anemia. It seems better, however, with most writers to regard only the cases as progressive pernicious anemia in which the affection is a primary blood disease, in which, so far as our present knowledge of the etiology and pathology goes, no change is found during life or after death save in the blood or the hematopoietic organs. That this is usually fatal is well known. Recoveries, however, are occasionally recorded. The term progressive pernicious had better be discarded, and the term employed first by Addison, primary essential anemia, substituted.

Looking upon this case as one of primary essential anemia, there remains to be noted the interesting connection between the injury with its nervous shock and the anemia. The patient and her friends assert that from a condition of apparent health, she almost immediately following the injury became an invalid, weak, dizzy, easily fainting, with swollen limbs, pale skin, in a word, anemic. Just how nervous shock produces anemia I will not attempt to say. Yet, if through a shock to the nervous system the secretion of the sweat glands, of the gastric glands or of the kidneys can be checked or increased, if the heart's

action can become rapid and irregular, or perhaps cease altogether, if a chorea or an exophthalmic goitre can be roused to activity, it can be assumed that the function of the blood-producing organs may become perverted, and this suddenly, through the influence of a deranged nervous system. I recall a case of cerebral hemorrhage with aphasia and hemiplegia in which there was fatal anemia; also a fatal case of anemia following upon a sunstroke.

I am inclined to rule out atrophy of the glandular tissue of the stomach, largely from the absence of any symptom indicating a previous catarrhal inflammation, though the emaciation, different from the well-preserved condition of pernicious anemia, the absence of mucus and of free hydrochloric acid and the enlargement of the stomach might seem to point in that direction.¹ There was certainly not present the small contracted stomach with exuberant development of connective tissue—cirrhosis ventriculi. The dilatation, more apparent than real, because of dislocation of the organ, was probably, as not infrequently occurs, due to relaxation of the atonic stomach walls. I believe there was no hidden carcinoma as the cause of the anemia because of the comparatively sudden onset; the absence of subjective or objective local symptoms; the unusually severe oligocytopenia, reduction of erythrocytes to 1,000,000 per cubic millimeter being unusual in the terminal anemia of carcinoma; the marked improvement under arsenic, the improvement lasting for at least six months, and being scarcely reconcilable with a carcinomatous anemia after it had reached a stage indicated by a blood count of only 666,666; the retinal hemorrhage and the absence of cachexia.

Whether or not an organic disease of the brain or cord or of the sympathetic or peripheral nerves was present no one who saw the case would say. The interesting researches of Minnich in this connection are recalled by some of the symptoms.

While nervous shock or disease of the nervous system

¹ Some, for example Strümpell, regard the changes in the glands of the stomach as secondary to the condition of anemia. Likewise the changes in the cord and other nervous structures.

is not recognized in many of our text-books as an important etiologic factor in pernicious anemia, a number of cases are reported in which this is the assigned cause.

Under this head are not included those cases of nervous disease as complications or sequelæ of pernicious anemia such as degenerations of the posterior columns or the other parts of the cord, etc., and which Minnich has recently gone into so fully. (Cf. also Lichteim, Trechsel, Burr, etc.)

Eichhorst quotes the case of an author who, after a most severe mental strain, succumbed to a fatal anemia.

Curtin, in 1885, under the title "Nervous Shock as a Cause of Pernicious Anemia," reports the case of a woman, 38 years of age, who was unexpectedly brought face to face with the body of her suicided brother with his throat cut. From that time health began to fail, and in four years and two months she was dead of a grave anemia. No blood examination; no autopsy.

2. A young lady was suddenly and brutally informed of her brother's death. Nervous prostration followed for many months, then pernicious anemia and death.

3. Practice of Dr. Musser: A woman, aged 42, after an attempt at her own murder by her husband, became nervous, excitable, almost insane; gradual failure of health, pronounced anemia; death in three years.

Curtin quotes also the case of a woman becoming profoundly anemic following fright at the house catching on fire. He also quotes from Mackenzie, who cites the case of Sir H. Marsh, where the young lady, who accidentally poisoned her father, was over-whelmed by grief, took to bed and died of anemia. Also the case of a young man who saw a child run over in the street, was greatly shocked, began to grow anemic; no organic lesion postmortem.

Under Sir William Gull, a young man died in Guy's Hospital of extreme anemia that had developed after he had been attacked by a sheep in a field.

Musser in 1885 gave a résumé of thirty-nine cases of pernicious anemia up to that time reported in America, and quotes cases of Curtin, Osler, Pepper and himself, where anemia seemed to be due to nervous shock.

Hutchinson cites cases in which nervous influence seemed to him to be the exciting cause. 1. A case of his own where mental worry over the death of a wife was the cause. 2. Case in consultation where a manufacturer who had worried about business had become anemic, apparently from no other cause than business worry. 3. Four daughters died in one week of smallpox. The father, apparently from the shock and the excessive grief, developed pernicious anemia.

Dr. Brower cites a case of pernicious anemia developing in a previously healthy young woman following a railway accident. Death in six months. He also calls attention to mental worry as an exciting cause of milder grades of anemia and of chlorosis, and is authority for the statement that in a student worrying and apprehensive about the approaching final examination, the hemoglobin became reduced to twenty per cent.

Schüle, in three cases of pernicious anemia in the insane, seemed to see some genetic relation between the incurable cerebro-spinal lesions and the progressive anemia. He quotes the experiments of Goltz, Heubel and Von Tarchanoff as tending to prove the influence of the nervous system on blood formation, apart from the trophic influence of the spinal cord.

Macphail also describes pernicious anemia as it developed in two insane patients.

Holst believes that through neurasthenia the secretory nerves and the trophic nerves are influenced in such a way that blood deterioration results. He regards the anemia therefore, in many cases, as a result and not the cause of the neurasthenia.

Hale White refers to a patient who fell on the ice. For fourteen days no symptoms, then weakness, numbness in legs and progressive severe anemia; apparent recovery.

Among those who assign to the nervous system, chiefly through what we must, for want of a more accurate term, call nervous shock, a certain rôle in the production of anemia may be mentioned Heiberg, Fabre, Germain Sée, Troussseau.

A number of observers believe there is some causal connection between lesions of the nervous system and pernicious anemia. Thus Saaski believes the gastro-intestinal form depends on nerve atrophy in Meissner's and Auerbach's plexuses. These changes he is inclined to look upon as primary and not as secondary to the anemia, though others reverse the order of pathologic change. He examined two cases and forty-eight control cases.

Brigidi examined the body of a woman aged 53, dead after two years of anemia. The only weighty postmortem finding was an inflammatory and fatty degenerative change in the celiac ganglia. He thinks the influence on the circulation of the digestive tract might explain the poor digestion and consequent anemia.

Pokrowski, autopsy on case of pernicious anemia, found changes in cerebellum, fourth ventricle and medulla, and was led to conclude that the finding in the central nervous system must have had an influence, if not the sole influence, in producing the anemia.

Banti refers to a group of anemias—anemia ganglionare—in which he believes the primary change is in the sympathetic nervous system.

Little also regards many cases as due to an irritation of the vaso-motor system.

I feel warranted from my study of this case and a perusal of the literature bearing upon this subject, in drawing the conclusion that in some cases of pernicious anemia there is a causal connection between shock or injury to the nervous system and the resulting anemia. Whether such shock acts by interference with the nervous mechanism of the digestive organs, the stomach, intestines, liver, pancreas, the ultimate result being a severe anemia, or whether through altered nervous influence, there is abnormal performance of function on the part of the hematopoietic organs, it is impossible to say. In assigning to nervous shock an influence in the production of anemia it is not necessary to regard it as the sole cause or even the prime cause. Just as in the case of pneumonia we look upon the pneumococcus as the main cause of the disease, but yet regard exposure

to cold as an exciting cause that favors the localization or pathogenic action of the specific organism, so in the case of pernicious anemia, the nervous shock may in some way merely favor the action of some other-wise inert microorganism or toxin, that under these altered circumstances produces a profound or even fatal anemia.

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DISCUSSION.

DR. H. A. WEST, of Galveston, Texas.—One fact in explanation of the influence of nervous shock in producing anemia perhaps was not fully brought out. I refer to the influence of nervous and mental shock upon the digestive organs; upon the appetite, causing anorexia, and such disturbances of the digestive processes as would account to a considerable extent for these anemic conditions. One can readily understand the philosophy of such a *modus operandi*. That the appetite is interfered with, assimilation and metabolism are disturbed, and anemia follows.

DR. J. H. MUSSER, of Philadelphia.—Recently two cases of pernicious anemia have come under my care which were secondary to, if not due to nervous influence, anxiety and grief followed by digestive disturbances. They would seem to indicate nervous shock bringing on gastro-intestinal disorders, with malnutrition and anemia. This view is also in accord with the studies of the pathology of pernicious anemia by Hunter and others, tending to show that it is related to, and is largely secondary to, conditions of the gastro-intestinal tract. The poisonous agent probably escapes the liver, is not destroyed as it should be, but enters and acts directly upon the blood, producing anemia. It seems to me that this is the train of processes

going on, and with such a view it is proper to say that shock and other nervous influences of a functional character rather than those of organic change act in producing the anemia. I have never seen pernicious anemia occur in organic disease of the nervous system, but shock and other nervous influences said to be of functional character may be promotive of that condition.

DR. J. WELLING BYERS, of North Carolina.—It seems to me that a number of conditions may bring about that vicious circle, if we may so call it, of malnutrition which results in pernicious anemia. Nervous shock may be one of these.

DR. LOUIS FAUGERES BISHOP, of New York.—I think this paper is very interesting as illustrating in another direction the fact that the nervous system presides over the chemistry of the body in whatever part of the body the chemistry takes place. We see that not only in anemia but also in gout. Gout is a disease which is very closely connected with a depressed condition of the nervous system, and the chemistry of the body seems to go wrong because the nervous system is not in condition to exert proper control. There is one interesting fact in connection with this control of the chemistry of the body by the nervous system, and that is the value of strychnine in a great many varied conditions. I think this value, not only in the treatment of anemia, but in the treatment of a great many diseases is due to its power of stimulating the nervous system to perform better its work of controlling the chemistry of the body.

SELECTIONS.

CLINICAL NEUROLOGY.

THE MENOPAUSE AND NEUROSES.—Dr. Homer C. Bloom of Philadelphia, from a study of 400 cases concludes that (*Univ. Med. Mag.*, Feb. 1896) the most prominent symptoms of the abrupt or surgical menopause are the intense nervous phenomena taking on almost any form in different individuals. These compared with those associated with the natural menopause are as the cyclone is to the storm. Flashes of heat are most intense, chilly sensations, tinglings or numbness are experienced. A frequent symptom is the burning parched feeling internally of which many of these women complain. They express themselves as “burning up inside”. Palpitations and throbbing of the internal blood vessels, muscular quivering, restlessness, insomnia and discomforts of all kinds occur. Frequent digestive disorders such as abdominal distress and distension accompanied frequently with constipation, bladder irritation, headache, vertigo and dyspnœa are present in different cases. Indeed these symptoms might be greatly multiplied for there seems to be no condition that can be produced by disturbance of the vasomotor system that is not present in some of these women. Unhappiness and woe are significant features in many cases, the mind conceiving everything deplorable. One of the most common manifestations of this class is the idea that the personality is no longer feminine, the patient abhorring the thought of being classed in the neuter gender. This morbid brooding over being unsexed is no doubt a potent factor in the production of melancholia, suicidal impulses and

mania. In cases in which celiotomy was done for removal of the appendages, and in women not over 33 years of age, all expressed themselves as having not only sexual desire but that the intensity in sexual congress in most of them had not materially diminished. Four of them declared that in every sense it was intensified. One of these cases was a woman on whom a section had been performed four years previously for inflammatory disease of both appendages. She had some flow periodically for six months, after which it ceased abruptly and she has had a most pronounced menopause as far as the nervous phenomena were concerned. In the foregoing cases there were three who suffered from the most intense pelvic inflammatory disease in which there were large pus-tubes with great tenderness in whom sexual congress was unbearable previous to the operation. In the aggregate as far as this group of cases is concerned the sexual condition of the patients was little different from that which would be expected in the same number of women in whom the appendages were intact. There is one other point in this connection in which there was a consensus of opinion among the women, and that is the normal vaginal secretions are greatly lessened during coitus. Another class of cases bearing upon this subject embracing hysterectomies performed upon women over 33 years of age gives entirely different information. These women with a few exceptions announced a gradual lessening of their sexual feeling and desire. Among those in whom there had been performed a total extirpation of the uterus there was almost an entire absence of the sexual passion and this disappearance was more rapid than after simple ablation of the appendages. It was further noted that in nearly all of these cases and especially after the hysterectomies that the menopausal symptoms are very severe and seem to be protracted to a much greater degree. It is also noted that coitus is purely mechanical and often attended with considerable pain after the performance of hysterectomy.

From a study of over 400 cases forming the basis of this paper and covering a period of six years the conclusions derived from a comparison between the physiologic and

surgical are as follows. That the normal climacteric may be attended by mild or moderately severe symptoms and that these are usually nervous phenomena. That as a function that is passing away it has nothing to do *per se* with originating organic diseases nor is it responsible for the ills of matronhood but that frequently owing to the fact that the coincident intense nervous phenomena mask other less pronounced symptoms and because of the common delusion that all conditions at this same time are consequent upon the change of life, organic disease is often overlooked. As a physiologic condition nearing its end there should be no menorrhagia nor increased menses and any discharge over and above the normal amount demands an immediate digital examination.

The length of time in which these women suffer from menopausal phenomena varies greatly. Where the change is brought about abruptly they are longer and more intense; when there is a dodging period covering a year or two, the symptoms are milder and the phenomena cease more quickly. An average of two years covers the duration of the usual symptoms attending the climacteric. The average age when menstruation ceased in this series of cases was 43 years and 6 months. The oldest woman in the series to complete her menstrual life was 54. The youngest to reach this was 27. The youngest had puberty at 10 years the oldest being a little over 18 years. The average menstrual life was 29 years and 3 months. Puberty is sooner reached in warm climates, and the negro woman from the South gives a history of early puberty. There is no positive relation between an early puberty and a late menopause. As to the sexual sense of women after the menopause the delicacy attendant upon an investigation of such a subject as the sexual life after this period prevents any special deductions on this point and yet it is surprising to learn that this life in some women is not dead at a far advanced age. In a woman nearly 70 years of age, twenty years past the climacteric there had been two apoplectic seizures. She was a widow for many years but was recently married and, having been advised to avoid any excitement for fear of

another stroke, wished to know whether sexual indulgence was contra-indicated. She declared that her sexual sense, her passion and her gratification was as great if not greater than before the menopause. As to it being a factor in originating disease of an organic character it can be set down as a truth that the nerve storm is so great in some of these women that something must give way and if there is a systemic predisposition we find coincident organic disease very much more frequently than after the natural menopause. It is also to be noted that these diseases are more frequently lesions of the nervous and vascular system.

OTITIC BRAIN ABSCESS.—Dr. A. A. Hubbell (*Buffalo Med. Jour. May*) states that the diagnosis of brain abscess is made probable by: 1. The history of the case and of a preceding otorrhea and ear trouble. 2. Those general symptoms pointing to inflammation in the cranial cavity—namely, headache; nausea; vomiting; chilliness or chills; moderate elevation of temperature. 3. Those general symptoms indicating suppuration; Headache; chills; temperature a little elevated; nausea and sometimes vomiting; dizziness; optic neuritis, not always; followed by 4. Those symptoms caused by pressure from accumulation of pus: Mental sluggishness; temperature not high, occasionally sub-normal; respirations, less frequent; pulse, slower (50 to 65); prostration; stupor; delirium. 5. Those localizing symptoms of temporo-sphenoidal abscess: Convulsions, if the cortical motor area is involved or pressed upon; aphasia, if the speech center is reached in the left frontal lobe; hemianopsia, if the occipital lobe becomes affected; hemiplegia (opposite side and generally partial), if the internal capsule of the brain is pressed upon or involved, or if the cortical motor centers are destroyed; paralysis of the third nerve of the affected side, if contiguous pressure and meningitis are sufficient. 6. Those localizing symptoms, if the abscess is cerebellar: Cerebellar incoördination, if there is pressure or involvement of the middle lobe of the cerebellum; persistent occipital pain, in some cases. In studying and analyzing a given case of otitic brain abscess, the differentiation must be made between it in its different stages, and acute purulent otitis

or mastoiditis, meningitis, thrombo-phlebitis of the large brain sinuses, extradural collections of pus, and brain tumor.

TIC DE SALAAM, according to Dr. Collins (Pædiatrics), in the types usually observed in the United States, is made up of series of rapid oscillating movements of the head and superior part of the body (*spasmus salutans*) which occur with a rapidity varying from ten to thirty times per minute. In some instances, during the height of the attack, the upper extremities are shot into the air and for the moment remained fixed while the eyeballs are rolled up, and the face has a fixed non-expressive appearance. Whether or not consciousness be intirely lost during this period can not be said with certainty because of the tender age of the patient and because of the rapid symptom fluctuation. In marked contrast with ordinary epileptic convulsions, whether "petit mal" or "grand mal", is the absence of any warning and the rapidity with which the little sufferer regains his composure after an attack. Apparently there is no tendency to failure of mental development or loss of what psychic faculties the child may have already obtained. The number of attacks which the patient may have in twenty-four hours varies from a dozen up to fifty or sixty, each attack lasting from one to three or four minutes. The phenomena have all the characteristics of a motor explosion or liberation of energy. Their occurrence is brusque, a rapid cessation between each twitch and an abrupt departure. The consensus of opinion of those who have seen most of this condition is that the disease is a modification of the "haut mal", and the treatment which seems most serviceable is the persistent administration of potassium bromide with the occasional administration for a few weeks of minute doses of opium, while at the same time persistent attention is directed to the regulation of the alimentary and emunctory functions.

NEW TYPE OF CROSSED HEMIPLEGIA.—Anna Gonkovski (*Nonvelle Iconographie de la Salpetriere*) reports the case of a man sixty years of age who had a paralytic stroke without loss of consciousness, followed by a right hemiplegia, without aphasia or the face being involved. Paralysis of

left half of tongue with atrophy, and with deviation towards same side.

A diagnosis of a focus of softening above the pyramidal crossing and between the olive and pyramid was made by Professor Revillod and confirmed later by an autopsy which disclosed an obliterating endarteritis with softening of the superior part of the left pyramid, involving the roots of the hypoglossus, which were degenerated. The descending degeneration of the pyramidal tract could be followed to the lumbar enlargement, although the lesion was but eleven days old.

ATROPHIC RHINITIS A NERVE DISEASE.—Dr. Eric E. Sattler (*The Clinical Chronicle*) believes Atrophic Rhinitis to be primarily and essentially a progressive degenerative disease of the trophic nerves supplying the nasal mucous membrane, in consequence, the disease is not curable though may be arrested. The treatment is entirely symptomatic and systemic.

SLEEPLESSNESS.—It is unfortunate that the physiology of sleep is not better understood. It is even more unfortunate that what we do know about the phenomenon of sleep is not more diffused among the profession. How frequently indeed, do we observe physicians who mistake unconsciousness for sleep, and who seemingly regard the goal of the application of their therapeutical measures, as having been reached, when they have succeeded in rendering a tired, worn out, nervous individual oblivious to his surroundings by placing him in a condition which they call sleep, but which is, simply unconsciousness. An experience of several years in insane hospital practice presented to the writer, in a very strong light, the enormity of this error and its wide prevalence. It was no uncommon sight, to see patients brought to the hospital in an unconscious state, due to the administration of narcotics, opium or morphine being the favorite drug used. One case is worthy of mention here, a male, neurasthenic, harmless, but suffering from the exaggerated mental symptom, so marked in this disease, was accompanied by his physician to the hospital. The

physician stated his reason for coming was, that he considered it important to keep his patient asleep, so that he would not appreciate the humiliation of entering the hospital, and further, that inasmuch as he had not been sleeping well for some time, and that he was now sleeping, he considered the opportunity a good one, to let him recuperate. To this end, the physician was at intervals giving hypodermic injections of morphine, and the poor, worn-out, narcotized patient, saturated with morphine, and believed to be asleep, was, as best he could, with his worn-out nervous mechanism, fighting for his life, which his respiration, weak pulse and inhibited reflexes, showed was at very low ebb. This case was not an exceptional one; it was, alas, too common an experience. The physician had lost sight of the very essential principle which should govern our therapy in the treatment of sleeplessness, and that is, that sleep has for its object the repair of the wear and tear of vital processes of life, and to insure sleep we must not interfere with these processes, which we do when drugs are given until sedation results.

There is another thing to bear in mind in the consideration of sleeplessness, and that is, that there is a source of irritation somewhere in the economy, which, if relieved, will be followed by sleep. Again, "an axiom" well worth remembering, is that the more gentle the means employed to induce sleep, the more natural will be the sleep induced, and the more gentle the means employed, the more careful must we be to select the right time for their use. We believe that Dujardin-Beaumetz was right when speaking of the use of drugs in the treatment of sleeplessness; he said: "That for a drug to be hypnotic, it must imitate the natural condition of sleep by effecting a lowered intra-cranial pressure and that drugs which, though bringing about unconsciousness do not lower cerebral pressure, or which increase it, cannot claim to be hypnotics. Opium and morphine are objectionable on this ground. Drug treatment must put the patient in a position to go to sleep in a natural way, and not *put* him to sleep." Sedatives do this, but narcotics do not.

In the use of sedatives we must be cautious and not use them *ad libitum*. The writer in a paper on "Sedatives in the Treatment of Insanity" (1892, *Hospital Bulletin of Minnesota*), said, "Each case is a 'law unto itself,' and as such requires patient and persistent study ere we commit the folly of giving a hypnotic, when more simple and efficacious methods would produce satisfactory results." You cannot cure sleeplessness by drug treatment; the drugs simply conserve nervous energy and act as valuable assistants to the building-up process, necessary to cure the sleeplessness. Sedatives act, as before stated, by placing the patient in a position to go to sleep, and nature does the rest.

In our experience we have learned to rely upon the bromides, chloral, cannabis indica and hyoscyamus as sedatives, which, if judiciously used, bring order out of chaos. The bromides lower the sensibility of the brain, and thus promote sleep. The single salts can be used, but in the writer's experience, where a sedative is indicated in sleeplessness, it is better to combine them, and when there is any excitement, add chloral. Cannabis indica is a sedative which is but little used by the general practitioner, and for the reason that it is misunderstood, misrepresented, and as a result never used as it should be. Clouston, Mathison and Echeverria have taught us their value. Hyoscyamus is another sedative, the value of which is not appreciated, a drug which is endorsed by Budde, Brush, Krafft-Ebing as a hypnotic. Now, these valuable sedatives, when combined, give us a thoroughly reliable and satisfactory agent, with which to treat sleeplessness, and in the writer's experience no more elegant or reliable preparation is before the profession than that of Bromidia, in which is combined in proper proportion, the bromide of potassium, chloral hydrate, hyoscyamus and cannabis indica. We feel that the profession can always rely upon this combination, and find it is especially useful in the treatment of sleeplessness.—Dr. Frank P. Norbury in *The Medical Fortnightly*.

NEUROSES FROM AUTO-INTOXICATION.—Dr. M. A. Bunce states (*Philadelphia Polyclinic* April 11, 1896) that among the more common symptoms that might be attributed

to peptone, ptomaine or leucomaine absorption are nerve depression, languor, drowsiness, vertigo, cephalalgia, nausea or vomiting, usually most marked during the acme of chyme absorption; dyspepsias, associated with pyrexia, vomiting, diarrhoea, headache and abdominal tenderness, which so closely simulate early typhoid fever. Among the dermic phenomena are urticaria, erythema, simple and multiform angio-neurotic œdema and general vaso-motor ataxia—the type possibly depending on idiosyncrasy, chronicity and the degree of irritation reflexed to the cutaneous vascular nerve mechanism. Neurasthenia and anaemia will at times point to the intestinal tract as the probable *fons et origo mali*. Nerve and muscular pains about the shoulders, especially the deltoid, pleurodynia, digital nerves of upper extremities, manifest as neurosis, anaesthesia or paræsthesia.

Cases of the above type frequently coexist with the lithæmic habit, though there are instances in which the gastro-intestinal disturbances stand out so prominently to the exclusion of the more characteristic signs of lithæmia, i. e., urinary, vascular, etc., yet with symptoms that are common to both, namely, the mental depression, drowsiness, vertigo, headaches, neuritic pains and myalgias, the question frequently arises which symptoms are due to the absorption of the soluble toxins and which are the result of the gradual accumulation and circulation of unoxidized waste products and uric acid.

Lactic acid resulting from activity of the penicilium glaucum is said to be a muscle poison and to lessen the functional activity of the brain and cord. Its absorption and circulation may in part explain the pain and sopor usual present. The following is the course of treatment generally carried out: The necessary injunctions as to diet, more or less strict avoidance of the fats, sugars, starches, of the abuse of alcohol, tea, coffee; curtailing if necessary to milk, plain or pancreatized, the latter not to be continued for any length of time, administered in small quantities, at frequent intervals warmed; if in the cold state it increases the discomfort. As the condition improves broiled minced meats, red or white fish, and the farinaceous foods are gradually

added. As constipation with a yellow brown furred tongue and abeyance of the hepatic function are generally present, a preliminary mercurial purge is given, preferably the mild chloride, combined with powder ipecacuanha or sodium bicarbonate; sodium phosphate is then used for a varying period, followed by a tonic cathartic. To maintain the canal in as clean a condition as possible resort is had to antiseptics, the best being the phenol group. In the atonic gastric catarrhs with flabby, tooth-marked tongues there may be given such prescription as the following:

R Tincture nux vomica m. 15
 Diluted hydrochloric acid or di-
 luted nitro-hydrochloric acid m. 20
 Essence pepsin..... fl. dr. $\frac{1}{2}$
 Tincture calumba sufficient to
 make fl. dr. 2
 MS. One dessert spoonful before meals.

In the neurasthenic type with hypersecretion:

R Bismuth subgallate..... gr. 5
 Salol..... gr. 2
 Extract nux vomica..... gr. $\frac{1}{6}$

Make in one capsule and take one half to one hour after eating. Strontium bromide may be used to advantage in the latter case, sodium and strontium salicylate when the muscles or nerve pains are marked. Knowing the value of potassium permanganate to neutralize, by oxidation, morphine and other vegetable alkaloids (many of which are metamerous with the ptomaines and leucomains that have been isolated) it was administered tentatively to advantage in kreatin-coated capsule from one-half to one and a half hours after eating, in the dose of 2 to 5 grains guided by the tolerance or stomach.

NEW FORMATION OF NERVE CELLS.—Vitzou has (*Jour. Amer. Med. Assoc.* Vol. XXVI) accidentally found that the assumption that there can be no regeneration of the central nerve fibers or cells is incorrect. February, 1893, he removed both of the postero-inferior portions of the hemisphere in a monkey. In four months the first total blindness began to pass away. Two years and two months

later the animal could see enough to avoid obstacles. At this time the brain was opened again when Vitzou was astonished to find that the space occupied formerly by the extirpated lobes was filled with a newly formed substance, which proved to be nerve fibers and cells not quite so compact as in normal brain. He believes that the improvement in the sight was due to this regeneration of the nerve fibers and cells.

NIGHT TERRORS.—Coutts believes that (*Medical Standard* May, 1896) the marked diversities of opinion as to the aetiology, symptomatology and gravity of this disorder depend upon the fact that two wholly different affections have been classed under a single name. The milder of these he proposes to call nightmare, the term night-terrors being reserved for the more severe. In night-terrors the afflicted person must see visions, while in nightmare it is sufficient that the little patient should "dream dreams." Pavor nocturnus invariably appears between the second and eighth year; nightmare may occur at any age. In pavor nocturnus there is invariably a neurotic family history. Infantile convulsions are frequent precursors of night-terrors but bear no fixed relation to nightmare. With nightmare they are likely to be associated chronic digestive disorders, nasal troubles, etc., whilst with pavor nocturnus the patient may display no other sign of ill-health. Marked differences are noted in the attacks themselves. In pavor nocturnus the onset is marked by a sharp cry, the patient sees some object which inspires with fear, he springs from bed, crouches in a corner and protests vociferously against this persecution. He recognizes no one around him, and in the morning, has no knowledge of what has happened. The same vision is likely to reappear in future attacks. In nightmare sleep is often restless from the outset, and the attack is but the culmination of a state of unrest. The child cries out, but when seen is usually awake, recognizes those about him and tells them of some vague fear or of a troubled dream. The same objects of aversion do not present themselves in subsequent attacks. He believes that pavor nocturnus is closely allied with epilepsy.

UNTOWARD EFFECTS OF TRIONAL.—Dr. J. C. Welch of Bellevue, Pa., reports (*Medical Standard* May,) the case of a morphine-using physician who, while suffering from morphine abstinence symptoms, was given 30 grains every three hours for four days when 30 grains twice daily were given for two days. He was noticed to be dull and bewildered and complained of heaviness and numbness of the limbs and of great mental depression. His speech was ataxic; the difficulty of speech was apparently of central origin, and at first cerebral haemorrhage was feared. In the preceding six days from two to two and one-half ounces of trional had been taken. The administration of this drug was then entirely suspended and caffeine and digitalis substituted. There was a gradual disappearance of all the unfavorable symptoms, the insomnia not returning.

HYDROPHOBOID SYMPTOMS IN AN HYSTERIC.—Dr. W. W. Long, Richmond, Va., reports a case of a 17-year old country girl (*Med. Standard* June) to whom he was called. The girl has a nymphomaniac history. Prostitution in the city sense in the rural districts of North Carolina is unknown. The patient first cohabited with men secretly, then almost publicly. On Sunday she went to a school-house in a secluded grove and let three or four men literally wear themselves out cohabiting with her. On another occasion at night in the field near a village she let every one who would, perform the sexual act. Twenty-five men and boys had intercourse with her on this occasion. Sexual excess with a negro had preceded the attack. When seen she was lying quietly on the bed much prostrated, frequent feeble pulse, rational but with a peculiar anxious expression on her face. Dr. Long told the attendants to give her a glass of water. The patient sat up in bed and placing the glass to her lips attempted to drink when she was immediately seized with a fit, she fell back in bed snapping and biting, the eyes rolled and sparkled like those of a mad brute. The attendants seized her, three or four being required to hold her in the bed, to prevent her from biting them, her own hands, the pillow or anything she could get in her mouth. She did not froth at the mouth though

the attendants said she had done so. The spasm of the throat and mouth was easily seen. After perhaps two minutes the convulsion ceased and she lay back limp and exhausted. Again he made her attempt to drink with the same result but in a less degree. A third time she attempted to drink exciting a very mild spasm. These spasms gradually vanished. The girl eloped, married and thereafter had but one or two attacks a year.

MOTOR DISTURBANCE OF THE STOMACH.—Dr. Kauffman emphasizes the fact that (*N. Y. Med. Jour.*, March 18, 1896) special ætiological factors must be considered first and the causes removed. Motor weakness in anaemia, neurasthenia, etc., will yield only to a suitable general treatment. In this respect proper diet is of the greatest importance. The ingesta must be sufficient to keep the body weight constant and if necessary even to cause an increase. But the food must be so selected and prepared that it will be apt to leave the stomach as early as possible. In this, culinary art can be of much assistance by sparing the stomach a portion of the preparatory activity. In text books the rule is laid down that only solid food should be given in motor disturbance and to restrict the ingestion of fluid per os as much as possible. This rule though useful in certain cases is not a safe one in all cases. At Kussmaul's clinic it was precisely in the severest motor disturbances that better results were obtained by feeding exclusively with suitable liquid or semifluid diet than with solid articles. Liebermeister had the same experience with his patients. These clinical experiences harmonize also with the results of experimental investigations according to which it has been demonstrated, especially by von Mering, Moritz' and more recently by Schule, that fluids pass from the stomach very soon while solid articles remain long in the organ, the time increasing with the consistence of the ingesta. Solid food must first be softened or liquefied before it can pass through the pylorus. Besides, owing partly to the chemical nature of the food, partly to its longer retention in the stomach, there is an active secretion by the wall of the organ whereby the intended advantage of the diet is soon

rendered illusory. But in recommending a dry diet the idea was that a filling of the stomach with a considerable amount of fluid must increase the muscular weakness. This is true whenever large quantities of fluid are taken in at once but not when fluid is introduced in smaller amounts. In preparing such a diet consisting of liquid and semifluid articles care must be taken as shown by Fleiner in interpreting Kussmaul's experience, not only that the fluid be given in smaller amounts and at definite intervals adapted to the individual condition, but the diet must also be bland and unirritating to the gastric mucous membrane, hence it should contain no concentrated solution of salt or peptone, no sugar and especially no alcohol since all these substances stimulate the mucous membrane to increased secretion and transudation whereby the amount of fluid is soon augmented. Even in cases of slighter degrees of motor insufficiency in which giving of full meals of mixed diet is permissible, the chemical character of the food with reference to the choice of the articles is of the greatest importance. The examination of the gastric contents is far more useful for treatment than diagnosis since it gives information as to which articles leave the stomach soon and which incumber it for a long time, besides it furnishes the best indication for the selection of the diet in gastric fermentation. In the case of fermentation aside from excluding ferment-producing and fermentable substances from the diet list the suppression of the fermentation within the stomach comes into consideration. This is best affected by thorough cleansing of the organs by irrigations possibly with medicinal solutions. Irrigations of the stomach are furthermore indicated when the fasting stomach is not empty, whether remnants of food or liquid containing hydrochloric acid be found. As the cleansed and evacuated stomach contracts markedly it may regain its former elasticity. Only in case in which such and similar indications are present should irrigation be practiced—a fact to be specially noted in view of the prevailing abuse of this practice.

The treatment may be supported in many ways by hydrotherapy and electricity. Of great importance too is

the activity of the patient during the day. In serious motor disturbances strict rest in bed is advisable. In the slightest grades the dorsal decubitus should be maintained at least for some time after the chief meals since the stomach is thus more easily evacuated. When great obstacles prevent the evacuation of the stomach and success is not to be expected by the method of treatment named, surgical interference for the removal of the obstruction should be attempted. The brilliant results obtained by surgery even when the diseased part is left intact and sufficient evacuation of the stomach is provided for by a gastro-intestinal fistula, plead most clearly for the importance to be attached to the motor disturbance".

SYPHILITIC SPINAL DISEASE.—Dr. Sottas has published an elaborate study of syphilis as it affects the spinal cord. The author has formulated the following conclusions as resulting from his observations on this important subject (*Inter. Med. Mag.*) :

1. Syphilis can act on the nervous system in two ways: First, directly; in attacking the parenchyma, it determines thus at the onset of the affection the first vague nervous troubles of the secondary period, and later, perhaps, certain systemic affections, as tabes. This mode of action is not clearly explained, for there are no anatomical characteristics which permit us to recognize the origin of the affection which are attributed to it. Second, indirectly in producing an inflammation of the vascular, lymphatic, and connective-tissue elements. The alteration of the parenchyma is secondary to these lesions. The reality of this process can not be disputed; it is affirmed by the aspect of the inflammatory lesions, which, although not special to syphilis, are nevertheless to a certain point characteristic of this affection. The process can strike all parts of the cerebro-spinal system, but is limited sometimes exclusively to the cord.

2. Syphilis of the cord appears at a period near that of infection, with a maximum between the end of the first year and the end of the sixth, and is much more frequent in men.

3. The inflammation begins with the vascular walls and perivascular regions and involves especially the small vessels of the periphery of the cord. In the large vessels it involves the internal and especially the external tunic, developing about the *vasa vasorum*. From this point it involves the perivascular lymph space, afterward the lymphatic system of the meninges; and finally the entire arachnoid cavity. The infection spreads by the circulatory system and rapidly in the lymphatic system, where it assumes an independent form. At this period the lesions are constituted by:—An inflammation of the vascular walls, which attains its maximum in the veins and small vessels; a diffuse general infiltration of the connective tissue of the meninges; an irritation of all the surfaces bathed by the cerebro spinal fluid (surfaces of the meninges, ventricular walls). These inflammatory lesions are characterized by a tendency to nodular formations (*miliary gummata* of the meninges, of the vessels, of the cord).

4. The alterations of the nervous parenchyma, of the essential elements, and of the neuroglia are secondary; they may result from imperfect nutrition on account of the vascular lesions of the cord and of the nourishing membrane, or from an invasion of the medullary parenchyma by the specific infiltration. The first is the more important cause.

5. According to the intensity, the distribution, and the rapidity of evolution of the primary lesions, the enemic necrosis of the nervous tissue appears abruptly as a transverse softening, which may be located at different points of the cord or predominate in one or the other vascular department; or else it appears slowly, and then the destruction is accompanied by a process of substitutive reaction of the neuroglia, which replaces the destroyed elements. The period of substitution is favored by the partial return of the circulation (collateral circulation, development of the *vasa vasorum*, formation of new capillaries in the obliterated vessels), and terminates in the neuroglia sclerosis. The connective tissue which enters the cord with the vessels is also thickened.

6. Although the necrobiotic lesions followed by sclerosis

constitutes the principal alteration, there are certain medullary and, especially radicular changes, which result from the invasion of the nervous tissue by an infiltration extending from a point in the meninges or from a perivascular sheath. This process can in certain cases assume a considerable importance.

7. While the lesions preserve the same characters, they may vary in their distribution. They are generally diffuse, but they sometimes assume the aspect of a transverse lesion, more or less intense, more or less limited, and located at different heights of the cord. They can be distributed more irregularly in a considerable extent of the cord. In every case they are more marked in the marginal zone. The dorsal location is the most frequent. Be the lesions confluent or be they disseminated the result is always the same, and they produce the effect of a transverse lesion, accompanied by a secondary degeneration ascending and descending. The lesions involve especially the territory of the postero-lateral spinal vascular system. They may predominate in certain regions of the cord—the lateral columns, the gray substance of the anterior horns—and thus simulate certain systemic affections.

8. The ordinary clinical evolution is as follows: At the period of formation of the primary vascular lesions and of those of the meninges, there are diffuse premonitory phenomena. At the period of softening and of degeneration of the nervous elements there is an attack of paraplegia, followed by paralytic phenomena and grave trophic troubles. At the period of sclerosis there is the chronic spastic paraplegia. The abrupt onset can be manifested without being preceded by a prodromic phase, or in other cases the spastic paraplegia comes slowly without passing through the acute stage.

9. Death may occur either in the first period of the affection from the localization or extent of the lesions, or more slowly from the progress of the affection or from a complication. The ordinary termination of the affection is a spastic paraplegia persisting in a chronic state after an amelioration more or less marked. The complete recovery

is possible only in certain conditions, when the primary vascular and meningitic lesions have been arrested before the final destruction of the nervous parenchyma. The reorganization of the necrosed nervous tissue, if it is possible, is manifested only in a limited degree.

10. In certain conditions the primary inflammation is accentuated in the meninges, producing a meningitis or a pachymeningitis, or else it assumes the form of a circumscribed gummatous neoplasm.

11. The iodo mercurial treatment is demanded at the appearance of the first symptoms. It acts only on the primary inflammatory productions and is without influence on the necrobiotic lesions once established.

12. The medullary syphilis is always a serious affection. Death may intervene in spite of treatment, especially in the acute forms. Outside of certain rare fortunate cases in which complete recovery is obtained, the amelioration never goes beyond a certain limit, which is fixed, on account of an incurable sclerotic cicatrix of the cord.—*Med. Review.*

NEURO-SURGERY.

OPERATIONS IN EPILEPSY.—Dr. E. G. Mason from an analysis of 70 cases arrives at the following opinion in regard (*Med. News*, March 21, 1896) to operations on epileptics, always considering an epileptic fit as a symptom of some underlying condition. Inquire particularly and very carefully about the first convulsion; what was its apparent exciting cause; what was its character, general or affecting only certain portions of the body, and what portion of the body was affected at the beginning of the fit. If there be an aura, investigate it carefully as it will not infrequently give a clue as to the seat of the lesion. If there has been a trauma or a suspicion of trauma shave the head and look carefully for a scar or a depression. If there is evidence of a trauma in a position corresponding to the initial symptoms of the fit an operation is usually justifiable. If you cannot get a clear history of the case give a placebo and place the patient under competent surveillance until you

can satisfy yourself as to the character of the fits. Do not operate on a porencephalic child and expect to cure the epilepsy. Do not as a rule operate on a case of post-hemiplegic epilepsy in a child and expect to cure. Do not operate on an old idiotic epileptic, a victim of idiopathic epilepsy with general convulsions of years standing. What then is the value of operative interference in the treatment of epilepsy? In the light of present experience Mason thinks fair to put it thus: A certain small percentage of the cases will be cured. A certain larger percentage will be improved. An even larger percentage will not be improved at all. An operation in almost any case will produce a temporary cessation of fits.

AMPUTATION IN TETANUS.—Four cases of tetanus are reported in the Journal of the N. Y. Academy of Medicine, and the article is summed up in the following words: Amputation practiced in the healthy tissue puts the patient in the best condition for the cure of traumatic tetanus. In cases where it can be done without too extensive mutilation it should be resorted to with as little delay as possible—after the first symptoms. When, from injury, the vitality and proper function of a limb are compromised and the question of amputation arises, the appearance of tetanus should turn the balance in its favor.—*Med. Times and Register.*

PSYCHIATRY.

AUTOTOXIC INSANITY.—At a meeting of the Medical Society of London, on May 11th, Dr. Allan McLane Hamilton, of this city, read a paper on the connection of autotoxins with certain forms of insanity, in which he considered at length the dependence of certain forms of psychic disturbance on the absorption of the soluble products of intestinal putrescence. The following were the conclusions of his paper. (1) Urines rich in indican contain very little or no preformed sulphuric acid, and are toxic; (2) when the sulphate ratio is materially changed it probably indicates autotoxins in connection with an increase in the amount of combined or ethereal sulphates; (3) such indications are generally

found with acute insanities in which rapidly developing symptoms occur; (4) fugacious and changing illusions and hallucinations, unsystematized delusions, confusion, and verbigeration in connection with insomnia, pallor, intestinal indigestion, constipation, and rapid exhaustion are due to autotoxis; (5) paranoiac states, or those in which concepts are the main feature, chronic stuporous conditions, and certain forms of dementia have little to do with the formation of the intestinal products of putrefaction; (6) various post-febrile traumatic, alcoholic, or drug insanities are those in which autotoxis is most constant; (7) the variations in the excretions of combined sulphates keep pace in the changes with the progress of an established insanity, *accès* and epileptiform attacks being directly connected with putrefactive processes; (8) the most successful treatment consists in lavage, intestinal douches, gastric and intestinal antisepsis by means of hydrochloric acid, borax, salicylate of soda, charcoal, guaiacol, or naphthalin, in small and repeated doses, associated with the administration of a combination of the red marrow from the small bones, blood, and glycerin.

—*Medical Record.*

THE BLACKSMITH AND THE PHYSICIAN.—A certain man was hanged, and he died, and he left two sons—honest men. Now, one of these sons was a blacksmith, but the other became a physician. And after their father had been taken from them, these brothers made their homes in other lands. And the blacksmith would have prospered, but it befell that some one asked him how his father died. And the blacksmith, looking angrily upon him, answered: "He was hung." For the blacksmith was an honest man. Howbeit presently, when a horse was missing, men gathered and seized and hanged the blacksmith, saying: "This man must take after his father." So the blacksmith did take after his father. And, at the same time, in his own city, one inquired of the physician by what means his father died. And the physician covered his face and wept. But while he wept he considered, saying within himself: "If I say he was hanged then shall I shock this man, and give him pain. Nevertheless I must tell him the truth." He said,

therefore: "My father died of heart failure." And again he wept, the questioner weeping with him. Then, this being told, men said: "Doubtless, since his father died of heart failure this good physician and loving son has made a study of kindred diseases." So they resorted unto him. And the physician became a specialist, and he looked at them who came in, and coughed once and sneezed twice, and demanded \$100. And they gave gladly. For the physician was an honest man.—*Indian Medical Record*.

EPILEPTIC MELANCHOLIA.—Dr. J. M. Finker, assistant superintendent of the Rockwood Hospital, Kingston, Ontario, reports in the *Canadian Practitioner* an interesting case of epileptic melancholia. The patient was a woman thirty-two years of age. She had several attacks of insanity before her admission into the asylum, and had made several attempts on her life. At times she was fairly well, and occupied herself in sewing and knitting. While in the asylum she was continually making attempts on her life in every way imaginable. Trephining was performed, a portion of the brain convolution being removed corresponding to the nervous supply of part of the local origin of convulsions. She made an excellent recovery from the operation, and was greatly relieved from her distressing symptoms. But pulmonary tuberculosis immediately developed, ran a rapid course, and the woman was soon dead. At the necropsy the heart was found to weigh nine ounces, and on examining the left auricle a needle was found near its appendix. On exposing this it was found imbedded in the wall of the left ventricle, close to the anterior interventricular groove. The needle pointed upwards, leaving the left ventricular wall just anterior to the aortic valve. Then it penetrated the wall of the left auricle at the margin of the appendix auriculae. The pointed portion of the needle then extended across the opening into the appendix. The point was just touching the opposite wall of the auricle, where a little papilla of vegetations was set up by the irritation of the point of the needle. In the ventricle the needle penetrated the heart muscle immediately behind the coronary artery on its way to the anterior interventricular groove. The needle was

firmly imbedded in the tissue, so that it could not be pulled out without using considerable force. It was one and five-eights of an inch long. It was black in color and its surface smooth. The left pleura was firmly adherent throughout. The superior lobe of the left lung was a mass of tuberculous nodules and some small cavities. The inferior lobe presented another feature of interest in the presence of a broken knitting needle. There was an old cicatrix in the skin to the left margin of the sternum. The needle, pointing downwards, entered the lung at the anterior border of the inferior lobe about two inches from the lower margin, passing downward, backwards, and slightly outwards, reaching the outer surface of the lung at a point about four inches from its posterior border and two inches above the circumference of the base. The needle was four and five-eights of an inch long, the broken end being slightly bent and the other end pointed and sharp. The needle was completely encysted.—*Western Medical Review.*

THE EDWARD JENNER CENTENARY AT GLOUCESTER.—It is extraordinary to note how at Gloucester, a town in which Edward Jenner resided for years, this centenary year of the discovery of vaccination is being kept. First, we find a board of guardians in fair weather when there was no small pox about, declaring themselves boastingly to be opposed to vaccination; then, frightened at their own mischievous default, first recommending vaccination to the public by means of circulars, and, later, when still more frightened, actually turning right about face on all their former boasts and resolves and deciding to enforce the compulsory clauses of the vaccination acts. Secondly, we find that their experience—just 100 years too late—has been most bitterly bought, for, according to last week's papers, out of ninety deaths from small pox in the hospital (there have been 118 in all in the city), seventy-four were in unvaccinated persons. Thirdly, we find that amongst this community which has been so long misled by the guardians, there have within a few weeks been some 700 cases of small pox, and that in the absence of any controlling vaccination the disease has seized that part of the town where the sanitary

conditions are by no means worst, but where there was an undue proportion of unfortunate children who were unvaccinated. Fourthly, we find some thousands of pounds being spent in an attempt to check small pox by hospitals, quarantining, and disinfection, but all in vain, for the disease goes on multiplying just the same; indeed, there was no less than 172 fresh cases last week. And fifthly, we find that even some of those most responsible for the terrible loss of life among the unvaccinated are hurrying to get protection by vaccination for themselves. We leave those who have been so grievously injured by disease, maiming, and death, to apportion the blame. Here we only note with regret and shame that any British city, and above all Gloucester, should be in the state in which that city finds itself in the centenary year of Edward Jenner.—*Lancet.*

NEUROTHERAPY.

BLISTERS.—When should blisters be employed? Why should they be employed? In what manner do they exert a remedial influence? These are questions to which no two physicians will give identical answers. Yet there is probably none who does not at some time resort to this method of treatment with the confident expectation of achieving certain results. Various theories of the action of blisters and other counterirritants have been proposed, but none has won universal acceptance. For our own part we have no theory on the subject. Experience tells us that in certain conditions certain recuperative phenomena follow the application of vesicants. We cannot by reflection or by study of the opinions of others arrive at a satisfactory explanation of the effect, and we know of no experimental data elucidating it. We do not know why a blister over the chest in a case of pleural effusion should have any greater remedial influence than one over the lumbar region, or why the use of croton oil upon the skin of the chest over an area of pulmonary softening should be more useful than a similar application upon the thigh; yet our exper-

ience convinces us that such is the case and we shall continue to resort to these expedients.

At a recent meeting of the Therapeutic Society of Paris (*La Médecin Morderne*, March 18, 1896), Huchard reported a case of albuminuria and subacute uremia following the employment of a blister, six by eight centimeters, over the epigastrium of an anemic girl of eighteen years, who had entered the hospital complaining of indigestion with gastric pain and constipation. The blister was allowed to remain for twelve hours and shortly after its removal nausea and vomiting, tachycardia, convulsive movements, and almost complete anuria with general anasarca, indicated the supervention of acute cantharidal nephritis. Recovery ensued in ten days under appropriate treatment. Huchard cited a case reported by Germain Sée, and one reported by Potainé, in which nephritis followed blistering; and referred to another case with a fatal result. As his final conclusion he stated "The principal indication of the blister is never to use it. The blister has had its day."

This extreme expression of opinion, however, did not find favor with all the members of the society. We are inclined to believe with some of them, that the fault in the case reported was rather with the special application than with the general method. Twelve hours is entirely too long to leave a blister *in situ*; nor does anything in the history of the case, as reported by Huchard, show that blistering was called for in that instance. Counterirritation with mustard would have answered every purpose, would very probably have relieved the patient and would not have caused nephritis. We have seen obstinate vomiting controlled by the touch of the Paquelin cautery over the epigastrium, but we should hesitate for that reason to cauterize a large surface. Notwithstanding Huchard's experience and his positive proscription of vesicants, we believe that the profession will continue to use them with judgment and therefore with benefit.

"S. S. C." in the *Philadelphia Polyclinic* writes the above. We have always thought it was in the probable

effect on the vaso-motor nervous system that the *rationale* of blisters in therapeutics is justifiable.—Ed.

THE NEW ENGLAND MEDICAL MONTHLY thus Comments on Ars, Merc, Calc, and Manganauro.

The many prominent medical practitioners, whose reports on the use of our gold solutions we have received, are apparently agreed on the following:—

1: That the best results are obtained by pushing these remedies to the point of toleration, and that *this may be done without fear of stomachic disturbance*.

2: That the maximum dose varies widely in individual cases, some patients taking thirty drops three times daily before showing physiological effects, others being unable to reach even the average maximum dose (15 drops).

3: That it is best to administer the solution in at *least* a wineglass of water, and to begin with a small dose (say 6 or 7 drops) and gradually increase.

FINALLY: That though the nature of these remedies and the class of cases in which they are indicated exclude the expectation of immediate results, their persistent use seldom fails to justify their administration, and the increase in number of red blood corpuscles to show the tonic effect upon the assimilative apparatus.

THE TREATMENT OF CHOREA.—Dott. E. De Renzi has made use of eserine, antipyrine, salol, and etherspray along the vertebral column, but he has confidence in only three remedies: (1) Absolute rest, avoiding any external excitation whatever, and placing the patient in a dark room. (2) The ascending electric current along the spinal cord—the best results with a gentle current, progressively increased. (3) Arsenic in large doses, commencing with twenty drops of Fowler's solution each day for children, and double this amount for adults. When the chorea ceases the medicine should be continued, for the disease returns readily. The nutrition of the patient must be maintained, and good food and gymnastics are useful.—*Gazetta degli Ospedale et delle Cliniche*.

PROTONUCLEIN.—Clinical reports of the successful

use of Protonuclein in Anæmia, in Ulcer of the Stomach and as a Metabolic Force by Dr. John Ferguson, Dr. N. H. Kirby and Dr. J. E. Warden, warrant further trial of this remedy in the diseases for which it is recommended.

THE NEXT ADVANCE IN ANESTHESIA.—Sir Benjamin Richardson points the way to what he terms the next great advance in anesthesia, although he is not yet able to say the exact form which this advance will take. He objects to all anesthetics which contain chlorine, which he thinks has always been the danger in regard to chloroform. What is wanted, he says, is an agent which can be easily applied and shall be capable of being so applied as to induce insensibility to pain with or without destruction of consciousness. To a certain extent this object is attained by methylic ether. It has the curious and most desirable faculty of destroying sensibility before it destroys consciousness, and recovery from it is exceedingly rapid. It may also, says Sir Benjamin Richardson, be considered the safest of anesthetics. Unfortunately it is a gas and is troublesome to administer. He thinks, however, that we may look hopefully for a method in which, by means of a single agent, we shall be able at will to suspend common sensation alone or to exalt the process into suspension of consciousness. When this object is attained with safety and facility the science of anesthesia may be considered as perfected.—*Chicago Clinical Review.*

KOLA DELUSION.—A very timely warning is given in *Médecine Moderne* regarding the popular use of extracts of Kola. This article is entitled “The Kola Delusion,” and in its discussion the fact is pointed out that increased capacity for work obtained through its employment is temporary and unreliable, like that gained from alcohol and cocaine. In truth, the effect produced by every member of this group of drugs, which the author very aptly calls “nerve-foolers,” in that they abolish the natural sense of weariness and fatigue, is due probably to an obtunding effect upon the nerve centers. That caffeine is closely allied to creatin and other tissue poisons which invariably give rise to a loss of energy when they have

accumulated in the body, is a further suggestive observation.—*Med. News.*

COE'S TREATMENT OF MULTIPLE NEURITIS.—Henry W. Coe, M.D., Portland, Ore., in *Medical Sentinel*, January, 1896, states that although this disease occasionally has a somewhat sudden onset, we need to appreciate that the cure is only possible after a course of treatment continuing through a somewhat extended period.

The local manifestations are often but the most striking evidences of a general state of lowered vitality, and may so clearly indicate to us some special cause in the case, as alcoholism, lead poisoning; or syphilis, that a course of appropriate treatment is easily and rationally indicated.

If a sequela of typhoid fever, rheumatism or diphtheria, our knowledge of these diseases and the care of sequential affections, which are often looked for, will avail us much.

In all these cases there is a general lowered vitality, and there is no place in neurological treatment where iron does better than in such affections. The tr. ferri chlor., as I have said before, seems to me to render the best results of any form of iron, although, no doubt, many other forms do well. Arsenic, beginning with a small dose of Fowler's solution, and pushing it to its physiological effect, and then reducing it to four or five drops for an adult thrice daily, may be used for many months. Another excellent form of arsenic is the bromide of arsenic, which may be pressed to its fullest extent, until puffiness of the lids be noticed, when the dose should be reduced to a limit within which no marked arsenical symptoms shall be manifested. The patient should enjoy both mental and physical rest. This rest, like other agencies in the case, should be used as long a time as possible. Alcohol, an important factor in many of these cases, should be carefully withdrawn. If spirits have been the liquor indulged in, beer should be substituted for a time, and then this entirely withdrawn. The bowels should be kept moderately free, remembering that in many of these cases constipation is a common symptom. Maltine with cascara is an excellent preparation where constipation exists, the maltine providing not only a nutriment but also an aid to

digestion, while the cascara which the preparation contains combats the tendency to constipation, and, in fact, if continued for a time, will largely remove such condition from the bowels. I might say that the bitter tonic in cascara is not removed from this preparation, and it is quite likely that this accounts for the superiority of this preparation over many others.

Warm applications upon the affected nerves at the onset of the disease often afford much relief, and warm baths are of value, but, as pointed out by Sachs, care needs to be exercised where anaesthesia exists, that serious burns and ulcerations do not result.

Anodynes should be used with much caution, for many an habitué has been created by the use of morphine in this disease. In many cases, however, as a last resort, some remedy to relieve pain must be employed. Atropine and hyoscine, either alone or in combination, should be given a trial before a resort is had to morphia, and these should be employed hypodermatically.

Electricity offers promise of much good, and no doubt the best form for this disease is the current from a voltaic battery. Gowers advises séances of twenty minutes, the current to begin along the affected muscles supplied through large sponges of such degree of current as shall visibly produce contraction. Massage has its defenders, and may be of some value in the latter stages of the disease. Contractures should be provided against according to the approved surgical methods.

ARSENAURO IN NEURASTHENIA.—Dr. J. S. Kennedy reports (*New Eng. Med. Mon.*) an obstinate case of neurasthenia of long duration which yielded rapidly to five drop doses of arsenauro given a half hour before meals and at bed time.

TETANUS CURED BY CARBOLIC ACID.—According to our esteemed contemporary, the *Medical News*, Dr. L. Oscherowsi reports in the *St. Petersburg Military Medical Journal* a case of tetanus resulting from gunshot wound of the leg cured by cutaneous injections of carbolic acid.

On the sixth day in the hospital, patient had light trismus; on the tenth day, severe trismus; on the twelfth day, general convulsions and tetanic twitchings. Morphine, opium, chloral had no effect; spasms increased in frequency and death was expected. On twentieth day injections of a solution of 0.6 acid carbolic in 30.0 aquae dest., 12 minims, every three hours. Two days later, improvement. On thirty-fifth day patient was discharged cured. Twenty-eight injections were given.

SUGAR AS AN ECBOLIC IN UTERINE INERTIA DURING LABOR.—M. Bossi, of Geneva, (*Rev. Illust. Polytech. Médcale*), applying the theory of Drs. Paoletti and Mosso, that sugar internally stimulates the uterine and voluntary muscles, gave an ounce of sugar in about eight ounces of water. In all but one of the cases, the ecbolic action showed itself in from twenty to forty minutes, nearly always lasting till the birth of the child. In the other case, a second dose had to be given. The contractions were always quite regular and free from any tetanic tendency.

Query: Would not the same contractions have been observed if a similar quantity of water had been given?—Ed.

NEURO-ANATOMY.

A SYMPATHETIC GANGLION IN THE OVARY.—Winterhalter (*Archiv. f. Gynaek.*, Vol. LI, Part I, 1896) has found that the vessels of the ovary have a perivasculär network of nerve fibres. A ganglion lies in the middle of the zona vasculosa made up of structures bearing the characters of sympathetic ganglion cells with processes surrounding the convoluted vessels in the neighborhood, breaking up into a delicate plexus. Winterhalter could not actually trace any processes passing from the ganglion cells directly into the follicular zone, but he believes that they enter that part of the ovary as the plexuses above described on the vessels.
—*British Medical Journal*.

NEURO-PHYSIOLOGY.

THE SYMPATHETIC AND THE INTESTINE.—Hallion and Franck have investigated (*Progress Med.*) the influence of the sympathetic nervous system upon the intestine. On measuring the difference of volume of the intestine by means of a special method and then irritating the sympathetic chain it was found that the vaso-constrictor nerve fillets began about the fifth dorsal nerve and the vasodilators about the eleventh dorsal. The union of these fillets constitute the splanchnic nerve.

PULMONARY VASO-CONSTRICITIVE ACTION OF THE GREAT SYMPATHETIC.—Francois Frank has succeeded in demonstrating the pulmonary vaso-constrictive action of the great sympathetic. Reflex spasm of the pulmonary vessels constitutes the principal condition of acute dilation of the right heart in painful abdominal affections. But it is necessary that cardio-inhibitory nervous influences should be brought into play simultaneously. These diminish the resistance of the myocardia which permits distension. Nasal irritation also provokes spasm.—*Progress Med.*

EDITORIAL.

[*All Unsigned Editorials are written by the Editor.*]

The 52d Annual Meeting of the American Medico-Psychological Association was held at Boston, Mass., May 26th, 27th, 28th, 29th, 1896.

The president of the association, Dr. Richard Dewey, delivered an address on "Our Association and Our Associates." The following papers were presented: "The Neuron Theory and Cerebral Localization," Theo. W. Fisher, M.D., Boston; "Cases of Paraphasia and Word-Deafness," W. L. Worcester, M.D., Asylum Sta.; "The Intra Cerebral Nerve-Fibre Terminals. Apparatus and Modes of Transmission of Nervous Impulses," Henry J. Berkley, M. D., Baltimore; "Gynecology in the Asylum," R. M. Bucke, M. D., London, Ont.; "Some Cases of Catalepsy Under Thyroid Treatment," Jos. G. Rogers, M. D., Logansport; "Four Cases of Insanity Associated with Peripheral Neuritis," E. N. Brush, M. D., Baltimore; "Several Writs of Habeas Corpus, and What Became of Them," J. B. Chapin, M.D., Philadelphia; "The Psychic Influence of the Night Season," A. B. Richardson, M.D., Columbus; "In Relation to Heredity," H. P. Stearns, M. D., Hartford; "Recent Progress and Present Tendencies of Scientific Psychology," G. Stanley Hall, LL.D.; "State Care and State Maintenance for the Dependent Insane in the State of New York, Carlos F. MacDonald, M.D., New York; "Disorders of the Muscular System in Insanity," Theo. H. Kellogg, M. D., New York; "Psychology of Idiocy," Frederick Peterson, M.D., New York; "The Hard Palate in Idiots," Walter Channing, M. D., Brookline; "Idiots Savants," Frederick Peterson, M. D., New York; "General Paralysis in Two Sisters, Commencing at the Ages of 11 and 16, with an Autopsy of One," August Hoch, M.D., Waverly; "A Study of Leucocytosis Associated with Convulsions" (Preliminary communication), Fred. G. Burrows, M.D., Waverly.

Receptions were given the members by the McLean Hospital and the Boston Medico-Psychological Society.

Training School Commencement.—The Commencement Exercises of the Training School for Attendants was held at the Amusement Hall of the State Hospital at Danville, Penn., Thursday, July 9th, 1896.

Pan-American Medical Congress.—Professor Dr. Don Francisco Bastillos, Calle de Tacuba No. 7, Ciudad de Mexico D. F., Republica Mexicana, has been elected Treasurer of the Second Pan-American Medical Congress to be held in the City of Mexico beginning the 16th of November. All members residing in the United States and Canada, and others who contemplate attending, should forward the registration fee, \$5.00, (gold) to him at once and notify Dr. C. A. L. Reed, Cincinnati.

A Woman Physician desires position on asylum staff; has had six years' experience in general practice and as Demonstrator and Professor in high grade woman's medical college and as collaborator of the ALIENIST AND NEUROLOGIST staff. For further information apply to editor of this journal.

The Anatomical Nomenclature of the Nervous System.—The following recommendations of the committee on neuronymy were adopted unanimously by the American Neurological Association at its recent meeting: 1. That the adjectives *dorsal* and *ventral* be employed in place of "posterior" and "anterior," as commonly used in human anatomy, and in place of "upper" and "lower," as sometimes used in comparative anatomy. 2. That the cornua of the spinal cord and the spinal nerve-roots be designated as *dorsal* and *ventral* rather than as "posterior" and "anterior." 3. That the costiferous vertebræ be called *thoracic* rather than "dorsal." 4. That, other things being equal, mononyms be preferred to polonyms. 5. That the "hippocampus minor" be called *calcar*; the "hippocampus major" *hippocampus*; the "pons Varolii," *pons*; the "insula Reilii," *insula*; the "pia mater" and "dura mater," respectively *pia* and *dura*. 6. That the following be employed in place of their various synonyms: Mesencephalon, pallium, oliva, clava, operculum, fissura hippocampi, cuneus, præcuneus, claustrum, fornix, infundibulum, vermis, hypophysis, epiphysis, chiasma, oblongata, lemniscus, monticulus, tegmentum, pulvinar, falx, tentorium, thalamus, callosum, striatum and dentatum.

Association of Assistant Physicians of Hospitals for the Insane.—At a meeting of this association held

May 7th and 8th, 1896, at Independence, Ia., the following papers were read: "Importance of Improving Nutrition in Treatment of the Insane," by Dr. A. L. Warner; "Inunctions of Leaf Lard in Cases of Emaciation," Dr. George Boody; "Degeneration in Criminals, as Shown by Bertillon System of Measurements and Photographs," Dr. O. McCorn; "Account of Autopsy with Abnormal Kidney," Dr. Jason Morse; "Degenerate Jaws," Dr. George Boody; "Examination of Insane Patients on Admission," Dr. Wm. C. Stearns; "Clinical Studies of One Hundred Cases of General Paralysis of the Insane," Dr. R. M. Phelps; "A Consideration of 368 Cases of Paretic Dementia," Dr. Irwin H. Neff.

How the Insane Character Change May Come About.—The following description by a mother as to how her daughter's mental character changed after an injury, tells the tale of the character change that marks insanity in at least one of its forms: She is not natural at all in some respects. Naturally modest and retiring, since the accident (a fall from a buggy while the horses were running) she has developed a mania for corresponding with young men, and seems entirely oblivious to the appearance of being bold. Her judgment seems gone. Her appetite and sleep are now normal, but her moods are sometimes morose, at others cheerful. She is gaining flesh since this trouble occurred. She was from childhood quiet and studious. Graduated last June and bore a good character at school as well as at home.

There seems nothing base, or impure in any of her thoughts, but the forwardness is entirely foreign to her nature.

She was always free from anything low in her inclinations and seemed deeply religious. And yet she delights in music of pensive or sacred character.

The Mississippi Valley Medical Association.—At a meeting of the Executive Committee of this association, at Atlanta, May 6th, Dr. H. N. Moyer, of Chicago, was appointed to deliver an address on Medicine and Dr. Horace H. Grant, of Louisville, to deliver an address on Surgery.

The indications are that the meeting to be held at St. Paul, on Oct. 20, 21, 22 and 23, will be the largest and most successful in the history of the association. As all the railroads will offer reduced rates for the round trip, an opportunity will be given to visit St. Paul and Minnesota dur-

ing the most delightful season of the year. H. O. Walker, M. D., Detroit, Mich., President; C. A. Wheaton, M. D., St. Paul, Minn., Chairman Committee of Arrangements; H. W. Loeb, M.D., 3559 Olive Street, St. Louis, Secretary.

Peacocks' Bromides and Cactina continue to receive from good professional sources, flattering testimonials to their efficacy and purity. We are glad to see this reliable St. Louis firm prospering and their specialties appreciated by the medical profession. The same may be truly said of all whose advertisements appear in our pages. The ALIENIST AND NEUROLOGIST accepts nothing that has no merit.

Bellevue Place at Batavia, Illinois, has been long and favorably before the readers of this journal as a desirable place for the mentally alienated of the gentler sex. Its administration, location, equipment and environment specially commend it to the profession of the United States. It is inferior to none among the institutions with which we are familiar for mentally maimed women. We speak from personal observation of the working of this old sanitorium for the mentally maimed.

The Pathogenesis of Peripheral Neuritis.—From investigations into primary and secondary lesions of the nerve cells Marinesco concludes (*Rev. Internl. de Med. et de Chir.*) that the lesions of the central end are due to the alteration of the prophoplasm of the nerve cell. Primary affections of the spinal cord induce at the same time, a lesion of the kinetoplasm and of the trophoplasm. Marinesco reaches the above conclusion after the following manner: "The nerve cell is composed of a homogeneous, fundamental part (trophoplasm), which contains within it elements colored strongly by the basic anilin colors—chromatophilic elements, or kinetoplasm, surrounding the nucleus and radiating into the protoplasmic elongations. The axis cylinder, of a fibrillary structure, belongs with the fundamental part of the cell, to the trophoplasm. The trophoplasm presides over the nerve and muscle fibers. The kinetoplasm is an apparatus destined to transform sensory or motor impressions. After section of a motor nerve, the kinetoplasm disappears progressively, from the periphery to the perinuclear layer. The axis cylinder and the myelin remain intact. The absent kinetoplasm may reappear if the trophoplasm is not altered. If the trophoplasm is affected, the axis cylinder becomes atrophied and degenerates."

Thus, the author concludes, is brought about the pathogenesis of peripheral neuritis.

Dr. Charles A. L. Reed, of Cincinnati, has been selected by the European Committee on organization of the International Periodical Congress of Gynecology and Obstetrics, as Honorary President of the meeting of that body to be held in the city of Geneva, Switzerland, the first week in September of this year.

The Meeting at Atlanta.—The *Medical Standard* thus comments on the meeting of the A. M. A. and Jenner Centennial: The Atlanta meeting of the American Medical Association, socially and scientifically, was a refreshing contrast to the two previous ones. The general addresses were unusually broad and brilliantly original. The pessimistic tone concerning medical practice acts pervading the president's address was most discouraging. The amendment making the secretary an active official in lieu of an incubus should be passed at the Philadelphia meeting. The secretary service of the association has been for some years decidedly bad and improvement is much needed. The assistant secretaryship specially requires amendment. Some one should be placed therein who is in touch with the railroads and could secure better transportation rates. The tendency of constitutional amendments, when adopted, to disappear from the secretary's desk has been repeatedly noted, and it requires supervision in this particular. The Jenner centenary celebration was especially interesting. Jenner, as Jefferson remarks, was a bright representative of that class of British medical practitioners, sagacious, well instructed, courageous and self-dependent in intellect, who, at the close of the last century, began to spring up in all parts of the country and have rapidly increased in number, so that now the prejudiced vulgar pedantic doctors of Sterne's and Smollett's pages are almost extinct as are the drunken squires who patronized and insulted them.

It is a singular illustration of how time brings about justice, that Gloucester, after abandoning the Jennerian doctrine, was lately decimated by a variola epidemic, such as has not occurred in Anglo-Saxon countries in a century. The society physicians with their usual snobbish obsequiousness opposed Jenner. The ridicule and misrepresentation to which he was subjected are now more pleasant to laugh at than they were for him to bear. The ignorant ("Book about Doctors") populace of London was instructed that people on being vaccinated ran a risk of being converted into members of the bovine family. The appearance of

hair covering the whole body, of horns and a tail, was said to have followed, in many cases, the operation. The condition of an unhappy child was pathetically described, who brutified by vaccine ichor, persisted in running on all fours and roaring like a bull. Dr. Woodville and Dr. Mosely opposed Jenner, the latter with a violence that little became a scientific inquirer. Numerous were the squibs and caricatures the controversy called forth. Jenner was represented as riding on a cow, an animal certainly not adapted to show the doctor off to the best advantage. Of Mosely the comic music sung:

"Oh, Mosely, thy book, nightly phantasies rousing,
Full oft makes me quake for my heart's dearest treasure.
For fancy, in dreams, oft presents them all browsing
 On commons, just like little Nebuchadnezzars,
There nibbling a thistle, stand Jem, Joe and Mary,
 On their foreheads, O horrible, crumpled horns bud:
There Tom with his tail and poor William all hairy,
 Reclined in a corner are chewing the cud."

Jenner's appearance (as he galloped across the vale of Gloucester visiting his patients) is thus described by an admirer: "When first I saw him it was on Frampton Green. I was somewhat his junior in years, and had heard so much of him that I had no small curiosity to see him. He was dressed in a blue coat and yellow buttons, buckskin, well polished jockey boots with handsome silver spurs, and he carried a smart whip with a silver handle. His hair after the fashion was done up in a club, and he wore a broad-brimmed hat."

Oophorectomy and Epilepsy.—The strong position taken by Dr. Senn (*Medical Standard*, June) before the American Medical Association concerning the abuse of oophorectomy in the neuroses, receives additional emphasis from the following case cited by Dr. Hammond (*Amer. Jour. of Surg. and Gyn.*) which is by no means unique in the experience of neurologists. He was consulted for epilepsy by a lady whose ovaries had been removed for the disease about a month. She had insisted on keeping them. The epilepsy continued unchecked. Leaving with an unfavorable prognosis, she consulted a "gynecologist," hoping to get a little cheer as the result of his examination of her uterus which, some one had told her, was diseased. She was something of a wag, and said nothing about the previous oophorectomy. The "gynecologist," after investigation of the uterus, vagina and accessories, gravely informed the

patient the ovaries were very much inflamed and that their removal would, in all probability, result in a cure of the epilepsy. She at once appreciated the humor of the situation, but the astonishment and chagrin of the gynecologist may be imagined when she exhibited the ovaries, suspended in their preservative liquor and no longer capable of being charged with causing epilepsy or of being guilty of other heinous offences.—*Editorial in Medical Standard.*

The Third International Congress of Psychology will meet in Munich, August 4th. About one hundred and fifty papers are announced up to this date, by English, American and continental writers. General secretary, Dr. Freiherr von Schrenck-Notzing, Max Josephstrasse, Munich.

The Medical world is having many congresses just now. We regret our inability to attend them all, for all are instructive and promotive of cosmopolitan fraternity among medical men.

The Coming International Medical Congress at Moscow would attract us were it not for the approaching Pan-American Congress to be held at the City of Mexico, our nearer neighbor, November 16th, 17th, 18th and 19th. We shall have to give our sister country's congress the preference, and we hope all American physicians who cannot attend all the congresses will at least attend the Mexican Congress.

The Standard Dictionary Again.—Preceding issues have pronounced on the excellence of this truly Standard dictionary of the English Language but so good a book bears repeated testimonies. This is the third copy of this most indispensable reference lexicon of our language purchased by us. So that we now have one for office, residence and reception room.

Aside from accuracy of definition and verbal completeness, the number and beauty of the century's illustrations, the decorations of honor, illustrations of ornithology and numismatics, solar spectrum and typical colors, national coats of arms, colors and ensigns, gems and precious stones, flowers and coins, heads and faces of the world, are schools of instruction in object lessons unequalled in any lexicon extant, not excepting the ponderous and grand Century dictionary. The national is the utilitarian dictionary of the century.

The Western Medical Review is a new candidate for professional favor, published at Lincoln, Nebraska. Its editor is Geo. H. Simmons, M. D. The initial number

before us, is in every way worthy of the confidence and support of the profession of our sister state and of the whole country. Its original department contains articles of scientific merit and clinical value, and its selections betray sound medical judgment and extended appreciation of the medical advances of the day, and the needs of the medical practitioner. The growing importance of clinical neurology to practical medicine is properly appreciated in the selections made. Epileptic melancholia and the insanity of pregnancy and the puerperal state appear among the extracts from the contributions of the recognized masters in psychiatry along with such subjects, as "Casts in the Urine without Albumin" and "Professor Senn's Clinic," etc. If subsequent issues equal the first, this able periodical ought to become an established success.

The Recent Hahnemanian Memorial elicits from our enlightened contemporary, the *New York Medical Times*, the following appropriate comment: "In this year of 'The Master's' glorification, it was interesting to read, in a homeopathic journal, such an article as that by Dr. Percy Wilde, of which an abstract is given on another page. Here we have a prominent writer and practitioner of the new school, arguing—with at least no small amount of learning and ingenuity—that its founder adopted and forced upon its followers 'a false interpretation of the law of similars,' while he was equally at sea in his understanding of the law of contraries, as propounded by Hippocrates! If Dr. Wilde is correct (and Dr. Hughes, in his brief rejoinder, does not venture to contradict him), it would almost seem as though that \$70,000 monument, which doubtless, will soon adorn our capital, ought in justice to bear the name and effigy of the Sage of Cos, rather than of the German enthusiast who borrowed his ideas, and narrowed them to suit an exclusive and one-sided hypothesis."

The *Times* is right. *Similia similibus curantur morbi* was quite as familiar to the father of medicine as the opposite and more restricted therapeutic law of *contraria contraries curantur*, the curing by similar impression being often found on close investigation and wider physiological knowledge to be by contraries, as the arresting of haemorrhages by hot water douches, through vaso-motor stimulation and arteriole contraction. It is a difficult matter to divide the practice of medicine on lines of therapeutic theory. The theory of to-day being supplanted by the broader facts of to-morrow. Regular medicine has discarded theory upon theory and resource upon resource

through the newer lights of chemico-biological, bacteriological and neurological science, while many of its earliest observed clinical facts and therapeutic procedures still persist, time tested and confirmed. The feeding of fevers supplanted the starvation of them, the liberal use of water, its denial, but the value of heat in arresting haemorrhage, practiced by the ancient boiling oil cautery for bleeding stumps, has been proven by piled up experience and multiplied observation, though the method is discarded, just as the world has supplanted the sail boat with the steamer and done away with the ox cart for the steam and electric car.

Medico-Psychological Association of Great Britain and Ireland.—The last general meeting was held at the rooms of the association, 11, Chandos Street, Cavendish Square, on Thursday, May 21st, 1896, under the Presidency of David Nicolson, M. D. Council Meeting at 1:30 p. m. At 4 o'clock, adjourned discussion on Dr. Hyslop's paper on "Pseudo-General Paralysis of the Insane." Dr. Robert Jones read "A short account of Claybury Asylum (the first new Asylum of London County Council) and the history of its first year." Dr. Mercier read a paper on "Medical Reticence." The following were Candidates for admission as Ordinary Members:—George Beamish, L.R.C.S., L.R.C.P.E., L. M., Medical Officer, H. M. Prison, Liverpool. Proposed by Drs. Wiglesworth, Grubb, and Richards. John W. Geddes, M. B. and C. M. Edin. Assistant Medical Officer, Durham County Asylum, Winterton, Ferryhill, Durham. Proposed by Drs. Robert Smith, Callcott, and R. G. Smith. Robert Wilson. M. B., C. M. Glas., Nailsworth, Gloucestershire. Proposed by Drs. Bonville Fox, Yellowlees, and Fletcher Beach. Robert L. S. Nuthall, M. R. C. S. Eng., L.R.C.P. Lond., Senior Assistant Medical Officer, Male Side, Holloway Sanatorium. Proposed by Dr. Rees Philipps, Halsted and Harper. The Members dined together after the meeting at the Café Royal, Regent Street, at 6:30 p. m. Dr. Jones received the Members at Clayburg Asylum, on Friday, May 22nd, in the afternoon.

FLETCHER BEACH, Hon. General Secretary. 11, Chandos Street, Cavendish Square, W.

How a Pittsburg Jury Settled a Question of Sanity.—The *Cleveland Journal of Medicine* for June, gives account of an insanity trial wherin an intelligent(?)jury wrestled with and decided a question in psychiatry in a manner *sui generis*:

Three physicians (two of them specialists in mental

diseases, and the other a careful general practitioner) brought out the fact that the man (about sixty), believed that his wife (a woman of fifty) was unfaithful; that she is frequently visited by other men; that her own son has frequent sexual intercourse with her; he frequently charged his wife with infidelity in the presence of his children; he had stuck pins in the carpet in front of the bedroom door in such a manner that they would be knocked down by the opening of the door; all the windows in the bed-chamber were nailed down by him to prevent men from entering the room to have intercourse with his wife.

No attempt was made to show that his suspicions were well-founded. The physicians testified that the man was insane and that he should be placed in an asylum, and that he might do violence to his wife, or to some man whom he might suspect of having improper relations with his wife; and expressed the opinion that the disputes in which he charged his wife with infidelity had a bad effect on the morals of his minor children in whose presence these disputes often occurred.

The jury found; "That said — is not a lunatic; but that he is at times dangerous to his wife, —, and that, in their opinion, to avoid danger to her life, he should be restrained or put under stipulation, or promise to remain away from her, his said wife."

Such is psychiatry before the arbiters of the law in Pittsburg. The alienists of Pittsburg and "most careful general practitioner" appear to have made but feeble impression for psychiatric science on that jury.

Mr. Stevens and the Queen and Crescent.—We had the good luck to be one of a jovial company of St. Louis physicians *en route* to Atlanta via the Big Four to connect with the Journal special, and the ill luck to be among the supperless waiters at Cincinnati upon the autocratic fiat of superintendent Stevens.

We were promised a prompt and agreeable connection and uninterrupted transit to Atlanta, but were held up by this autocrat who "owns the road", as he said, because of a mishap to the engine to a train from the north with the Parke, Davis party. We were glad to meet this party when they did tardily connect with us, but had important business to attend to in Atlanta, which had to go by default because of this delay. The Journal of the American Medical Association about expresses our feelings on the subject in the editorial pages of May the 23d and preceding issue. The Queen and Crescent is a nice road, but Mr.

Stevens is not "monarch of all he surveys," nor is he either magnate or magnetic enough to coerce or persuade us over that route again. We are accustomed to going on roads that have regard for the value of their own promises and their patrons' time and comfort.

We quietly promised Mr. Stevens this much of an ad. *free gratis*, and here it is: You will get what you are promised on that road, if it suits Mr. Stevens. If not, "you will have to wait until the Monon people arrive." "They own the road", you see, and Stevens is the great Mogul.

Presumption as to Sanity.—*The Journal of the American Medical Association* makes this timely and important note of a recent court ruling on this subject: Every man is presumed to be sane. This presumption of sanity, the supreme court of Mississippi holds, in the case of *Ford v. State*, decided March 30, 1896, will be sufficient to sustain the burden resting on the State of proof of sanity on the part of the defendant at the time of the commission of the act charged if the defendant offers no testimony sufficient to raise, out of the evidence in the case, a reasonable doubt of the defendant's sanity at the time he committed the act. Where general, habitual insanity is shown to exist, it is presumed to continue, and the burden of showing that the act was committed in a lucid interval is upon the State, and in the sense that that burden is not satisfied by any presumption of sanity, but must be satisfied by proof on the part of the State of the lucid interval at the times of the doing of the act. But if only temporary or recurrent insanity, as from paralysis or epilepsy, be shown, there is no presumption therefrom of continued, general, habitual insanity. And when all that the evidence in the case shows is this latter form, temporary insanity, without raising a reasonable doubt as to whether it existed at the time of the act in question, the State may rely on the presumption of general sanity with which it started out, without offering proof as to the lucid interval; for the presumption of sanity with which the defendant is invested at the outset is a general and universal one, embracing, as a whole all its parts, the included presumption of sanity at all times, including the particular time when the act in question was committed, unless the evidence raises a reasonable doubt, not of temporary, but of general insanity, and hence of insanity at the particular time.

Returned Insanity after Oophorectomy.—The following letter is instructive:

DR. C. H. HUGHES, St. Louis, Mo.

Dear Doctor: I have a lady patient, aged about 45, who has been relieved of both ovaries and uterus, now suffering with relapse of mania, what variety I am not prepared to state. About four months since she was paroled from _____ Asylum, in fair, mental and physical condition, suffering principally from flatulence, which the physicians of the above institution thought might be remedied by coarse food and fresh country air. About thirty days from the time of her parole she grew restless, sleepless, and had two convulsions, followed by temporary paralysis of lingual nerves. She soon rallied, however, and for thirty days more seemed fairly well until the same restlessness and sleeplessness, preceding two convulsions, recurred. The convulsions occurred last on Christmas eve, and although her mind has been quite clear most of the time she has suffered with sleeplessness, oppression about the heart with great amount of flatulence, and has rather lost than gained strength. Her condition at present is nervous, restless, sleepless, with a vindictive, sarcastic state of mind, not disposed to take medicine and incoherent loquacity. Twice leaving the asylum she has been constantly attended by her daughter, who is a regularly trained nurse with experience, both hospital and private. While she is in the state of mind I have tried to describe, she is not unmanageable as yet and has some lucid moments.

Now, the advice I would ask is, should we put her under your treatment is there an institution other than regularly constituted asylum where she could be placed and have her daughter in attendance? Please answer this by return mail if possible, as we are anxious to make the change at once.

Yours truly,

* * *

[We recommended that this patient be committed to an asylum. We do not think there is any place in the surgery of psychiatry for normal ovariotomy.]

Insane Hospitals.—We begin the presentation of the working of our Insane Hospitals to our many readers among general practitioners, as a means of giving light where light is certainly needed in regard to the great question of insanity, its treatment, avoidance and restriction, by giving an article on the subject from the superintendent of the well-known Hartford Retreat for the Insane. We may follow this subject further.

The National Druggist appropriately touches up an arrogant and egotistical German firm, which has made many exhibitions of its pitiable ignorance of American pharmacy and misconception of American good nature. *The National Druggist* might have enumerated names that would make Merck tired to read them.

Were are the Wyeths and Squibbs, Parke, Davis & Co., Mariani & Co., Gardner, Fairchilde, Reed & Carnick, Wheeler, and many others whose names and valuable specialties in pharmacy appear in these pages.

Merck has made an unpardonable blunder, a blunder which even German pharmacists would correct, for they have paid the tribute of the highest praise of American pharmacy, as have likewise German Medical journals. The Darmstadt Chemical Company's vision is very "mercky." Self-interest and self-laudation have obscured their optics. Laboring under corneal opacity to "the good and the true" in American medicine and pharmacy, they have stirred up a cataract that will engulf this egoistic firm that neither knows how to talk or advertise in America.

Prof. Nicholas Senn, of Chicago, was elected president of the American Medical Association. The next annual meeting will be held in Philadelphia.

A tribute to American surgical genius and to the cradle of American Medicine.

Dr. M. Allen Starr, of New York, has been elected president of the American Neurological Association for the ensuing year. The next session will be held at Washington in 1897, in connection with the American Congress of Physicians.

Special Regulations for the Second Pan-American Medical Congress to meet in the City of Mexico on the 16th, 17th, 18th and 19th of November, 1896.

ENROLLMENT.

Art. 1. In order to be properly enrolled, each member of the Congress will pay to the Treasurer thereof in the City of Mexico, the sum of five dollars gold.

GENERAL SESSIONS.

Art. 2. There will be one opening session, one closing and one intermediate session of a purely scientific character.—Art. 3. The opening session, which will be of a solemn character and presided over by the Supreme authority of the Nation, besides being attended by the members

of the Congress, will also be attended by the members of scientific societies, and other distinguished persons who may be invited. The session will be opened with the report of the General Secretary. This will be followed by a speech of welcome, pronounced by the President of the Congress. Two members will then speak on scientific subjects, and they will be followed by a speech from the President of the Republic. It is strongly recommended that the scientific speeches should be of short duration. The intervals between the speeches will be filled up with musical performances.—Art. 4. At the closing session, the General Secretary will notify the place designated by the Congress for holding the third meeting.—Art. 5. The Treasurer will present his accounts to the Congress, showing the disbursements made of the funds entrusted to his care.—Art. 6. A scientific speech will be delivered and a short speech by one Representative of each one of the nations attending the Congress.—Art. 7. In the intermediate session, four speeches will be delivered on general matters, by persons who are highly distinguished in medical science, and who, having been in due time invited to do so, have accepted the commission; one of these speeches being pronounced by a Mexican physician, who shall be invited to do so by the Committee of Management.—Art. 8. No discussions will be held in the General Sessions.

SESSIONS OF THE SECTIONS.

Art. 9. The sessions will be held from 9 to 12 a. m. and from 3 to 5 p. m., in the places that may be designated by the Organizing Committee. They shall be presided over by the President of each section, alternating with the Vice-Presidents of each one of the nations that are represented in the respective sections.—Art. 10. The person who may be appointed by the Committee of Organization, will be the ex-officio Secretary of each section and he will fill his post alternately with the Secretaries of the nations who may be represented in the sections; but should the latter not be present, their places will be supplied by the President in office.—Art. 11. The President will direct the discussion in accordance with the order of the day, and will decide all questions that may arise, and that may not be provided for in these regulations.—Art. 12. The ex-officio Secretary will make out the minutes, and for that purpose, besides his own notes, will collect those of the Secretaries who may have acted in the section. He will also collect from the persons who may have spoken, the written extracts referred to in Art. 19.—Art. 13. All questions relating to

the debates which are not provided for in these Regulations, will be decided in accordance with general parliamentary practice.—Art. 14. The voting will be by name or by putting the question.

PAPERS, EXTRACTS THEREOF AND DISCUSSIONS IN THE SESSIONS OF THE SECTIONS.

Art. 15. All papers will be presented in writing.—Art. 16. Each author will forward to the Secretary of the Organizing Committee in the City of Mexico and before the first day of August of the present year, an extract not exceeding 300 words, of the paper to be presented by him. These extracts will be printed in English, French and Spanish and will be distributed to the members of the Congress before the session in which they are to be read.—Art. 17. No paper will be announced which is not accompanied by this extract; but the authors who comply with these conditions, will have a right to have their work published intact in the transactions of the Congress.—Art. 18. The reading of the papers in the sessions must not last more than 20 minutes; when the papers are so long that they cannot be read within that time, the authors will give extracts from them, either in writing or by speech: but they will be published intact in the transactions of the Congress and in the language in which they have been written.—Art. 19. The extracts referred to in the preceding article will be delivered at the same time as the papers, to the Secretary of Section to which they pertain.—Art. 20. The members of the Congress who may take part in the discussions in any section, will present their speeches in writing at the termination of the sessions, to the respective Secretaries of such sections and they will also be published in the transactions.—Art. 21. The papers which have been announced for the reading in the order of the day in each section, will serve as subjects for discussion. In such discussions, no speaker will be allowed to speak more than once and for five minutes; but the author of the paper under discussions will be allowed to reply, if he considers it necessary, in one sole speech, which will not go beyond ten minutes.

AUXILIARY COMMITTEES IN THE MEXICAN REPUBLIC.

Art. 22. These Committees will be appointed by the Committee of Organization and will be composed of one member for each Local Medical Society, or in their absence, of one physician for every centre of population. They will co-operate with the Committee of Organization in promot-

ing the success of the Congress. Said Committees were appointed during the first months of the present year.

EXECUTIVE COMMITTEE.

Art. 23. In order to form this Committee, the Organizing Committee will appoint seven members, including the President, Secretary, Treasurer, and the Mexican representative in the International Executive Committee, and such members will attend to everything relating to the business of the Congress, in accordance with the regulations that they may adopt for that purpose.

Dr. Manuel Carmona Y Valle. Dr. Rafael Lavista. Dr. Eduardo Liceaga.

Mexico, January, 1896.

The Mississippi Valley Medical Association will hold its Annual Meeting at St. Paul, on October 20, 21, 22 and 23. Addresses will be given by Dr. H. N. Moyer, of Chicago, on Medicine, and by Dr. Horace H. Grant, on Surgery. Dr. H. O. Walker, of Detroit, Mich., is President. Dr. C. A. Wheaton, Chairman Committee of Arrangements.

The Resignation of Dr. I. N. Love from the chair of Clinical Medicine and Diseases of Children in the Marion-Sims College of Medicine leaves a void in the faculty of this institution that will not be easily filled. Love's lectures are fluent and instructive, and so entertaining as to always hold his class in rapt attention while he speaks, a dissideratum in the teaching corps of a Medical College too often overlooked.

In many medical schools no style of speaking and teaching is considered too dry for the medical student, a plain speaking knowledge of the English language not always being regarded as requisite. Love taught the science of his chair in entertaining phiraze and never made a student tired to listen to him.

CORRESPONDENCE.

THE SECOND PAN-AMERICAN MEDICAL CONGRESS.

The Committee on organization of the Second Pan-American Medical Congress has elected Dr. Manuel Carmona y Valle, President, Dr. Rafael Lavista, Vice-President and Dr. Eduardo Liceaga, Secretary, and has announced November 16, 17, 18, 19, 1896, as the date of the meeting to be held in the City of Mexico.

The most cordial invitation is extended to the medical profession of the United States to attend and participate in the meeting.

Titles of papers to be read should be sent at the earliest practicable date to Dr. Eduardo Liceaga, Calle de San Andres num 4, Ciudad de Mexico D. F. Republica Mexicana.

The date selected is in the midst of the delightful midwinter season when the climate of Mexico is the most attractive to the northern visitor.

The occasion should stimulate the medical profession of the United States to a most cordial reciprocation of the generous patronage accorded the Washington meeting of the Congress by our Mexican conferrees.

It should be remembered that the United States is the largest, and in many regards the most important of the American Countries and that as a consequence more is expected of it than of any other Occidental Nation. In no particular is this more true than in the maintenance of position in the realm of scientific medicine on the Western Hemisphere. It is, therefore, simply essential that in this Congress—the most important of all Medical Congresses, in its exclusive, yet broad American significance—the best thought and the best work of the American profession shall be conspicuous in the proceedings.

The zeal and enthusiasm of the Mexican profession and the active interest of the Mexican Government are co-oper-

ating to make the second Pan-American Medical Congress attractive, important and memorable.

Those who contemplate attending should send their names and addresses at as early a date as possible to Dr. Charles A. L. Reed, St. Leger Place, Cincinnati, that the Committee in Mexico may be advised of the probable attendance.

WILLIAM PEPPER, *ex-officio President.*

A. M. OWEN,

A. VANDER VEER,

CHARLES A. L. REED,

ex-officio Secretary.

International Executive Committee for the United States.

MEXICO CITY, January, 1896.

Dr. C. H. Hughes.

St. Louis, Mo.

Dear Sir:—On behalf of this Committee and in my capacity of Secretary, I have the honor to address you, begging that you will kindly contribute to the success of the Second Pan-American Medical Congress with your valuable personal assistance, besides that which you may be able to obtain in your illustrious country.

Presuming on your consent to the above, I would feel sincerely obliged if you would have the kindness to address the different Medical Societies, Universities or Schools of Medicine, as well as the prominent men who are disposed to cultivate medical science, inviting them to attend this coming Congress, which will be held in the city of Mexico on the 16th, 17th, 18th and 19th of November of this year, sending also delegation whose members will forward their papers with the anticipation that is required by the accompanying regulations.

You will easily understand, and I have no doubt will impress on your countrymen, the desirability of union amongst all the nations that form the Western Hemisphere, with the view to combined labor in scientific matters, taking advantage of the facilities we enjoy for investigation, in the

New World that we inhabit. With an area that covers all latitudes in the two hemispheres, it is washed by the two great oceans, consequently, presents all the physical conditions that could be desired to give an immense scope to scientific investigation.

It is an undoubted fact, that the collective efforts are not the sum of the unities of which they are composed, but rather of their multiplication. If all the physicians of the American Continent and surrounding islands were to work simultaneously in order to lay before the world at any given moment, the conditions under which life is developed in each of the districts where they live; the influence of latitude, altitude and all other climatic conditions on the development of the human species, on the duration of life, on the manner in which disease presents itself, on the manner in which the organism reacts in each one of these districts, according to the conditions of the locality; the resources which each district offers to therapeutics under the varied circumstances of its climate, flora and fauna; we would be able to offer to the scientific world, and in one sole table, the medical geography, the climatology, the physiological evolutions and all the vital data that pertain to the enormous length of the American Continent. This Congress will at the same time form a criterion of the degree of culture that has been reached by the different nations forming the great American family.

A Pan-American Medical Congress will furnish means for studying most of the precautionary measures to be taken against epidemic and epizootic diseases; for obtaining uniformity in the nomenclature of the diseases, in order to prepare tables of mortality; for proposing uniform methods of preparing medical statistics, and in short, for giving uniformity and solidarity to all medical labors in the Western Hemisphere.

I do not doubt that your illustrious nation will contribute to this great work, sending to the Second Pan-American Medical Congress the largest personal contingent possible and a due portion of scientific works and I therefore hope that you will kindly notify me in answer, of the persons

who propose to attend the Congress, and in due time forward me their works. I remain, Your very truly,

E. LICEAGA.

CINCINNATI, May 22nd, 1896.

*Dr. C. H. Hughes,
Editor, Alienist and Neurologist.*

St. Louis, Mo.

Dear Doctor:—I have just received from Dr. Liceaga the enclosed Special Regulations of the Second Pan-American Medical Congress, and forward the same to you, with the request that you publish them at your early convenience.

You will pardon me, if I am a little urgent in soliciting your active co-operation in this movement, as the time which has been accorded us by our Mexican conferrees is very limited, and we must certainly make a good showing at Mexico. This can only be done through the active co-operation of the medical press of the United States. I know how potent this influence is, from my experience in connection with the First Congress, and I have therefore the more confidence in relying upon it in the present emergency.

Again thanking you for favors already conferred, I am
Very sincerely yours,

CHAS. A. L. REED.

HOW THE COCAIN HABIT IS SOMETIMES FORMED.

C. H. Hughes, M. D., Editor, St. Louis.

Dear Doctor:—I have a patient, male, age about 25, who contracted the cocaine habit by using Dr. Briney's Catarrhal powder, he cannot control himself. Can you recommend a private sanitorium; not too expensive? I have had no experience with the treatment of such cases, but believe they should be restrained until the habit is broken. Please give your views upon the subject, and refer me to the best place for such cases. Yours truly,

A. C_____.

REVIEWS, BOOK NOTICES, ETC.

JULY MONIST. The leading and concluding articles of the July *Monist* deal, under different but not contradictory aspects, with the problem of good and evil. The first, by Dr. Woods Hutchinson, formerly of the University of Iowa, now of the University of Buffalo, and a member of the Episcopalian Church, is entitled the *Holiness of Instinct* and forms an eloquent plea based on the testimony of evolution for the installment of our natural instincts as guides in moral conduct. Professor Hutchinson's article is a brilliant apotheosis of the beauty and joy of life and should be left unread by none who would grasp or corroborate the moral upshot of the doctrine of evolution. The last article by the editor, Dr. Paul Carus, grapples with "The Problem of Good and Evil" from a scientific and philosophical point of view, showing it to be a positive aspect of life as opposed to the current impression that it is merely a subjective and illusory species of existence, and contrasting the God-idea and the Devil-idea as two of the most significant and potent factors in human advancement. He regards the figure of Satan in religion as not an idle fancy, but as a mental and mythological symbol of very important objective facts.

Professor Eucken, of the University of Jena, contributes a fascinating article on "Philosophical Terminology and its History."

A powerful and suggestive article on "Causality," by Prof. Fr. Jodl, formerly of the University of Prague, but recently called to a Chair of Philosophy in Vienna, submits to exhaustive analysis the ideas of David Hume and his followers, Kant and the Kantians. An interesting essay in the present *Monist* is that by the noted French anthropologist, Dr. Paul Topinard, who, in continuation of a series of articles on "Science and Faith," writes on the conditions which precede man's becoming a member of society, which later subject he will discuss later. There is the usual Literary Correspondence from foreign countries, Book Reviews, etc. (Chicago and London: The Open Court Publishing Co.).

THE ANNIVERSARY OF THE STANDARD DICTIONARY. The Funk & Wagnalls Company celebrated, on November 27th, 1895, the first anniversary of the completion of their "Standard Dictionary," by putting to press the 90th thousand of this work.

The most significant of the triumphs of the first year of this remarkable dictionary, and the most gratifying to Americans, is the wonderful reception given the work by the most exacting of the linguistic critics in England. Especially is this so when we remember how reluctant, naturally enough, the English are to look to a foreign country for a dictionary of their own tongue. It is something extraordinary for an American work of this kind to

elicit words of such enthusiastic praise as those uttered by such scholars of the Oxford University as Professor Sayce and Max Muller, and well-known scholars of other English universities, and from such journalistic critics as those of the *London Standard*, *Saturday Review*, *Notes and Queries*, *Nature*, *London Times*, *Westminster Review*, *Athenaeum*, *Mark-Lane Express*, *Scotsman*, *Liverpool Post*, *St. James Budget*. The latter closes his critical review with the following superlative endorsement:

"To say that it is perfect in form and scope is not extravagance of praise, and to say that it is the most valuable dictionary of the English language is but to repeat the obvious. The Standard Dictionary should be the pride of literary America, as it is the admiration of literary England."

THE OPEN COURT. Among the notable series of articles announced by *The Open Court* for the current year is Count Leo Tolstoi's *Christianity and Patriotism*, a searching and luminous sketch of the origin of patriotism in European countries, and of the methods by which it is fostered and perverted by governments for attainment of their selfish ends. Count Tolstoi regards the sentiment of "patriotism," so-called, as incompatible with Christian notions, and gives in justification of his views a profound analysis of the fixed and irrational habits which support despotic governments. The publication of the articles, which were written on the occasion of recent demonstrations in favor of the Franco Russian alliance, was interdicted in Russia, although they appeared in the Russian language. Count Tolstoi's utterances, while to some they may seem surcharged with his own peculiar views of Christian anarchism, nevertheless contain matter which may be taken to heart by all nations. The series will begin immediately.

EARLYS' INFERNO is rather late in making its appearance. The title is quite applicable to the style of this "great confederate epic", as the author styles this attempt to revive the buried memories of the "late unpleasantness." The author styles himself a strippling of Chickamauga. One might infer the youth of the author at the time of the fratricidal strife, or at least that he was not a soldier either of the Union or of the South for such efforts to revive the bitter memories of that saddened past are not now made by any real soldier of either cause that was lost or won. The tottered flag of the lost cause has been furled forever and the old flag and new vows cement us, while common glories array both federal and confederate.

"AEROPOROTOMY," ETC., ETC. By S. W. Kelley, M. D., Cleveland, O. Professor Diseases of Children in the College of Physicians and Surgeons, Med. Dept. of Wesleyan University, Pediatrician to the Cleveland General Hospital, Consulting Physician to the Cleveland City Hospital, President Ohio State Pediatric Society, etc.

This author has coined the above word and asks for professional opinion as to its utility and acceptability. There would seem to be a place for such a term to designate operative procedures about the air passages. The term aerotomy (to cut for air or aeration) would be quite as expressive and briefer.

PHYSICIANS' VISITING LIST FOR 1896. Lindsay and Blakiston. This well-known Visiting List presents several improvements in the new edition for 1896. More space has been allowed for writing the names and to the memorandum page; a column has been added for the amount of the weekly visits and a column for the "Ledger Page." The reading matter and memoranda pages have been rearranged and simplified. The Lists for 75 Patients and 100 Patients will also have special memoranda page as above, and hereafter will come in two volumes only, dated January to June, and July to December.

THE BIBLE'S A, SUPPORTED EY THE BIBLE'S HISTORY. By the Rev. Joseph H. Gauss. A book, newly issued, of some of the solid facts from the granite quarry of the world's history concerning the Bible for the busy, everyday man. We know the Author's ability and pains taking studious habits of research are guarantees of the merit of this book and our knowledge of the book and its author justify us in commending it to all interested in the subject. It is a book especially valuable to all searchers of the truth.

THE PROPAGATION, PRESERVATION, AND USE OF VACCINE VIRUS. An address delivered before the General Session of the American Medical Association, at the Jenner Centennial Celebration, Atlanta, Ga., May 7, 1886. By Francis C. Martin, M.D., Boston, Mass., Fellow of the American Academy of Medicine.

THE PROSTATE. Some of its acute and chronic conditions and their treatment, with remarks upon the cause of enlarged Prostate. By L. Bolton Bangs, M.D., of New York, Consulting Surgeon to St. Luke's, the City, and the Methodist Episcopal Hospitals, etc.

A Case of Double Salphingo-Oóphorectomy, Excessive Loss of Blood from Separated Adhesions Necessitating a Second operation within three hours, Etc. By Hunter Robb, M.D., Professor of Gynecology, Western Reserve University, Cleveland, O.

Ueber die Empfindungen, welche vermittelst der sog. Gleichgewichtsorgane wahrgenommen werden und über die Bedeutung dieser Empfindungen in Bezug auf die Entwicklung unserer Raumvorstellungen. By Prof. W. v. Bechterew.

HYDRO-GALVANISM of the URETHRA. By Robert Newman, M. D., New York, Consulting Surgeon to Hackensack, Bayonne and McDonough Memorial Hospitals, German Dispensary West Side, N.Y. and Home in Yonkers, etc., etc.

EXPERIENCES wITH Paquin's Antitubercle Serum in the Treatment of Laryngeal Tuberculosis. By Hanau W. Loeb, A. M., M. D., Professor of Diseases of the Nose and Throat in the Marion-Sims College of Medicine etc., St. Louis.

A Case of Acute Tuberculosis Treated with Dr. Paquin's Antitubercle Serum, Recovery. By J. R. Lemen, M. D., Professor of Physical Diagnosis and Therapeutics in the Marion Sims College of Medicine, St. Louis.

Brain Resistance to Uremic Poison. By Dr. Brummell Jones, Kansas City, Mo., Professor of Diseases of the Mind and Nervous System in the College of Physicians and Surgeons, etc., Kansas City, Mo.

Über die Wirkung der Theebestandtheile auf körperliche und geistige Arbeit. Von August Hoch, Arzt am McLean Hospital, Waverly, Mass., und Emil Kraepelin, Professor der Psychiatrie in Heidelberg.

Tumor of the Brain, with Double Nasal Hemianopsia. By J. T. Eskridge, M.D., Professor of Nervous and Mental Diseases in the Medical Department of the University of Colorado, etc., Denver, Col.

The Association of Hemianopsia with Certain Symptom-Groups, Chiefly with Reference to the Diagnosis of the Site of the Lesion. By Charles K. Mills, M. D., and G. E. Deschweinitz, M.D.

The Localization of Lesions in the Pons and Preoblongata. By Charles K. Mills, M.D., Professor of Mental Diseases and of Medical Jurisprudence in the University of Pennsylvania, etc.

The Diagnosis of Intracranial Tumors. By Charles K. Mills, M.D., Professor of Mental Disease and of Medical Jurisprudence in the University of Pennsylvania, Philadelphia.

A Case of Paranoia Unrecognized for Twenty-Eight Years, and its Lesson. By Edward C. Runge, M. D., Superintendent of the St. Louis Insane Asylum, St. Louis, Mo.

Observations on Some Criticisms of Serum Therapy. The Action of Serum on the Blood. The Results of Serum Therapy in Tuberculosis.* By Paul Paquin, M. D., St. Louis, Mo.

Report Upon Two Cases of Tumor of the Spinal Cord, Unaccompanied by Severe Pain. By Pearce Bailey, M. D., Assistant in Neurology, Vanderbilt Clinic etc., New York, City.

Anti-Tubercle Serum; The Treatment of Consumption by Sero-Therapy; Reports and Presentation of Cases Treated; Exhibition of Serum, Etc., Paul Paquin, M. D., St. Louis.

The Treatment of Tuberculosis by Injections of Immunized Blood Serum. By Paul Paquin, M. D., Medical Director, Sanitarium for Throat and Lung Diseases, St. Louis, Mo.

Die Lehre von den Neuronen und die Entladungstheorie. (Untersuchungsresultate des Nervensystems nach der Golgi'schen Methode). Von Prof. W. v. Bechterew.

Ueber die Schleifenschicht auf Grund der Resultate von nach der entwickelungsgeschichtlichen Methode ausgeführten Untersuchungen. Von Prof. W. v. Bechterew.

Ophthalmia Neonatorum. By William Cheatham, M. D., Professor of Ophthalmology, Otology and Laryngology in the Louisville Medical College, Louisville, Ky.

The Pathfinders. By James T. Jelks, M. D., Professor of Gynecology and Syphilology in Barnes Medical College, St. Louis, Mo., etc. Hot Springs, Ark.

Results of Thyroid Treatment in Sporadic Cretinism. By Frederick Peterson, M.D., Chief of Clinic, Nervous Department, Vanderbilt Clinic, etc., New York.

Aseptolin. A Formulated Treatment for Tuberculosis, Septicæmia, Malaria and LaGrippe, with Reports of Cases. By Cyrus Edson, M. D., New York City.

Some Further Observations on the Relation of Pelvic Disease to Insanity in Women, with Report of Cases. By John Young Brown, M. D., Lakeland, Ky.

Some Cases Showing Possible Physical Signs of Degeneration. By Irwin H. Neff, M.D., Assistant Physician Eastern Michigan Asylum, Pontiac, Mich.

Deformities of the Hard Palate in Degenerates. By Frederick Peterson, M. D., Neurologist to Randall's Island Hospital for Idiots, etc.. New York.

Proceedings of the American Medico-Psychological Association, at the Fifty-First Annual Meeting held in Denver, June 11-13, 1895. Volume 2.

A Consideration of 368 cases of Paretic Dementia. By Irving H. Neff, M. D., Assistant Physician Eastern Michigan Asylum, Pontiac, Mich.

Pharyngeal Tuberculosis. By Robert Levy, M. D., Professor of Laryngology and Physiology, Gross Medical College, etc., Denver, Colo.

The Significance of Gonorrhœa, occurring in Pregnancy, Labor and the Puerperal State. By Prof. H. Fehling, of Basel, Switzerland.

Pruritus of the Genitals. By Hunter Robb, M.D., Professor of Gynaecology, Western Reserve University, Cleveland, O.

Kraepelin on Psychological Experimentation in Psychiatry. August Hoch, M.D., McLean Hospital, Waverly, Mass.

Forage Conditions of the Prairie Region. By Jared G. Smith, Assistant Agrostologist, U. S. Department of Agriculture.

Did he Sham on the Gallows? A Review of the Windrath Case. By J. Sanderson Christison, M.D., Chicago.

Sero-Therapy in Bone and Joint Tuberculosis. By Geo. W. Cale, M. D., F. R. M. S., London, St. Louis.

Immunity and Cure. By E. Stanley Abbot, M.D., Assistant Physician, McLean Hospital, Waverly, Mass.

On the Relation of Sex to the Prognosis of Epilepsy. By William Browning, M.D., Brooklyn, N. Y.

An Improved Method of Diagnosing Diabetes from a Drop of Blood. By L. Bremer, M.D., St. Louis.

Yeast Nuclein in the Treatment of Hip-Joint Disease. By Charles W. Hitchcock, M. D., Detroit.

Some Phases of Syphilis of the Brain. By Charles K. Mills, M.D., Philadelphia.

Observations in Ophthalmic Practice. By William B. Meany, M. D., St. Louis.

The Extension Corset and Its Indications. By Alex. C. Wiener, M.D., Chicago.

Notes and Comments. By Orpheus Everts, M. D., Cincinnati.

On Germinal Selection. By August Weisman.

THE
ALIENIST AND NEUROLOGIST.

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ST. LOUIS, OCTOBER, 1896.

NO. 3.

ORIGINAL CONTRIBUTIONS.

DIFFERENTIAL DIAGNOSIS OF
INSANITY.*

By C. B. BURR.

Medical Director of Oak Grove, Flint, Mich.

THE absence of any definite pathological basis for mania, melancholia and similar states of perverted brain action displaying themselves in irregular sensory, motor and intellectual manifestations, proves a serious stumbling block in the attempt to carefully differentiate these so-called functional insanities. Perhaps for practical purposes it is relatively unimportant that lines of demarkation between them should be closely drawn. Whether the irregular cerebral action be of the nature of depression or excitement, the bearing of the matter is that reduction in nervous force and unnatural flow of cell energy are present. Therapeutically, we have to contend with conditions of cerebral innutrition and exhaustion.

The absolutely pure types of mania and melancholia are not numerous, states of temporary depression and sluggishness and emotional distress being observed at times in mania and of brief ecstasy in melancholia. Indeed, so impracticable

*Read at the meeting of the Tri-State Medical Association, Angola, Ind., July, 1896.

is it to invariably classify functional mental states in these groups satisfactorily, that an intermediate position is now claimed for acute confusional insanity by recent writers, and this is accorded a place in the nomenclature of disease.

In view of the paucity of material on the subject of differentiation in insane conditions, and the inconsistent character of diseased mental manifestations it ought not to occasion surprise if mistakes in diagnosis (common as they are) were still more numerous. From a therapeutic point of view, to fail to differentiate between a mania and a melancholia with frenzy is relatively unimportant if proper safeguards are thrown about the patient. Both these conditions are curable under favorable circumstances, but while this is true, and the indications for medical treatment much the same in both conditions, their day to day moral management implies a correct acquaintance with the underlying emotional states. Again, while we may safely say that the prospects for recovery of a simple uncomplicated case of acute mania or acute melancholia are good, to offer this hope in the case of one suffering from the depression of recurrent mania (mistaking the condition for simple melancholia), or to predict recovery for one in the maniacal stage occasionally attending paretic dementia, is to do injustice to the friends of the patient and to weaken the influence of the medical practitioner himself.

In the absence of a pathological basis for mental disease, unattainable in the present state of our knowledge, we are compelled to fall back upon symptomatological groupings. Aetiological classifications are in existence and are clinically of considerable interest and satisfaction, but the student will find much practical value in the separation of morbid mental states into those* of

- 1st. States of mental depression
- 2nd. States of mental exaltation
- 3rd. States of mental alternation
- 4th. States of mental enfeeblement
- 5th. Brain disease with predominant mental manifestations.

*Adapted from Clouston.

States of mental depression comprise the melancholias and all so-called functional disturbances of mental action characterized by persistent lowering of emotional tone.

Among states of mental exaltation, the most interesting is that form of disease known as acute mania, and under this head are included all mental diseases displaying excitement as a prominent feature, exclusive of melancholia with frenzy, chronic mania, recurrent mania in the period of excitement, and cases of organic dementia (the most frequent and important of which is general paresis or general paralysis of the insane).

The intermediate group, which partakes of the nature of both mania and melancholia, is acute confusional insanity. This form of disease is characterized by extreme mental confusion, varying emotional states, hallucinations and delusions of a changing character, and changing mental impressions.

The type of states of mental alternation is recurrent mania, relapsing mania or *folie circulaire*, which shows periods of excitement alternating with periods of depression, and at times, periods of composure and complete lucidity.

Under states of mental enfeeblement are included, all conditions of mental deterioration, acute or chronic, curable or incurable, such as dementia (mental impairment acquired), imbecility (congenital mental deficiency), paranoia and the like.

In the last group, brain disease with predominant mental manifestations, are found; paretic dementia, dementia from hemiplegia, from epilepsy and from tumor or coarse brain disease.

Mania acute is an insanity of recent onset, the leading characteristics of which are elation, changing delusions and active excitement. Its development is usually sudden, although it is commonly preceded by depression, emotional disturbance, sleeplessness, loss of appetite and bodily derangements. The disease may be of all grades, from relatively slight restlessness, loquacity, increased and abnormal business enthusiasm, irritability, perversion of feeling and egotism, up through the severer forms attended by

complete incoherency, absence of self-control, untidiness of habits, and demonstrations of violence, to the severest type, that of acute exhaustive mania, in which the excitement is more of the nature of delirium, and in which low mutterings, picking at the bed clothing, the accumulation of sordes upon the teeth, rapidly increasing debility and death, appear.

In a typical case of acute mania, impressions travel quickly and are, as a rule, pleasurable, hallucinations and delusions of a changing character are present,* the memory is temporarily impaired, there is failure in judgment, in reasoning and in ideation. The emotions are exalted and pleasurable. The will is impaired and inhibitory control is hindered or lost. There are inattentiveness, disorderly conduct, destructiveness, and lack of correct appreciation of events. The physical symptoms are; rapid circulation, dry tongue, hot skin, suffused and congested eyes, slightly elevated temperature, scanty urine, inactivity or looseness of the bowels and fitful sleep. Food is taken indifferently, owing to the inattentiveness of the patient, and is often badly assimilated in consequence of deranged secretions.

Acute mania may be mistaken for alcoholic delirium. This disease relatively frequent in general and hospital practice, is not unlike acute mania in many of its manifestations. The history of the case, the extreme physical perturbation in alcoholic delirium, the characteristic fixed hallucinations and delusions of a painful type, the gastric disturbances, the tendency toward prompt subsidence under appropriate treatment will prevent the error of confounding these two conditions. In passing, and at the expense of digression, permit me to mention a, to me, very interesting clinical fact: Alcoholic insanity (not acute alcoholism, but the degenerative condition due to prolonged alcoholic indulgence) seems to destroy the appetite for liquor. Given the development of an insanity due to drink, and the patient is thenceforward free from the gnawings of appetite. Indeed, a positive repulsion to liquor in every form is frequently noticed in degenerative mental states, due to the prolonged use of stimulants. I have not a few times met with the experience of having an egg nogg or milk punch when needed to sustain life,

flatly refused by an insane patient who had been formerly addicted to excessive alcoholic indulgence.

Mania acute may be confounded with the delirium attending fevers, tubercular meningitis, simple meningitis and septic diseases. Doubtless, mistakes of this kind are infrequent, but I have seen a very pure case of tubercular meningitis removed to an asylum. The history of the case and the physical symptoms must be the physician's main reliance. Caution should be exercised here, lest great harm be done a patient by subjecting her to the fatigue and exposure of travel, and reproach brought upon the medical profession by the action of a member in advocating or permitting removal from home under such distressing circumstances. The mistaking fictitious for real strength in cases of mental excitement is an ever present danger to the medical practitioner in treating these patients. I well remember a number of years ago, that two patients were brought to the Eastern Michigan Asylum, from different parts of the state within twenty-four hours of each other. Both died from pneumonia within thirty-six hours of their arrival at the institution. My recollection does not serve me sufficiently well to permit any statement as to the assigned cause or duration of mental disease in these patients. I am strongly inclined to the belief, however, that the delirium was in one of the cases at least, a febrile condition. In neither case was the attending physician justified in permitting removal from home. Intense fever, burning skin, convulsive movement, muscular twitching, spasmodic action, opisthotonus, headache, paralytic symptoms, present in association with mental excitement are to be viewed with deep alarm.

In hystero-mania, we have brief and evanescent excitement arising in one of hysterical mental organization, in consequence of habitually unchecked impulses. This form of mental disease frequently shows itself at the developmental period, pubescence. There is impairment of the will, or at all events, inhibitory control is not exercised. Patients of this class are very imitative, and thrive on sympathy. They are emotional, possibly feign convulsive seizures, affect opisthotonus, do disorderly acts, are mischievous. It is

important that this condition be early recognized, that a wholesome moral *regime* may be adopted. Such patients do exceedingly well in institutions—this largely because of the recognition of the mental state on the part of those having their care, and the judicious ignoring of the sensational demonstrations which had made the individual the object of so much neighborhood interest. Hospital treatment may, in some instances, be avoided, however, if the patient is under healthful discipline at home, cared for by a trained attendant, withdrawn from the disturbing and emotion-increasing society of female relatives, and stimulated to exert his latent powers of self-control.

Chronic mania occasionally shows exacerbations of mental excitement. It is but necessary to point out this fact to place the diagnostician upon his guard that he do not consider the condition acute mania, and prognosticate recovery. The history of all cases should, if possible, be added to by interviews with unprejudiced observers. It is astonishing how frequent inaccurate observation is and how much is concealed by relatives in their accounts of cases. They aim to make it appear that the mental trouble is of recent onset, and are contented if they can mislead the medical practitioner and deceive themselves. In chronic mania, we find greater fixity of delusions than in acute mania, and mental impairment. It is a secondary condition following upon uncured acute forms of disease, especially melancholia with frenzy and acute mania.

One suffering from recurrent mania undergoes periods of excitement and periods of depression, these with or without intervals of composure and complete lucidity. The first attack frequently occurs at the pubescent age, or in women, a little later, at the age of twenty-one or thereabouts. It is a developmental disease, remotely attributable to some innate constitutional defect, and it is not surprising that its first symptoms should present themselves at an age during which occurs the greatest physiological crisis which the system undergoes. In the stage of excitement, the demeanor of the patient may be similar to that of one suffering from acute mania, but excitement is rarely so intense. Well

marked delusions and hallucinations are frequently absent, and there may be so perfect coherency as to deceive the inexperienced examiner. There is an extravagance in expression and a high coloring of innocent or immaterial things. Patients of this class are fond of misconstruing, and with the slightest basis, make embarrassing accusations against others with a view of justifying loss of temper and impulsive acts. They are frequently scheming and malicious, and have a fund of sarcasm and invective, which may be of service in court in mystifying juries and convincing these bodies of our peers that there is no necessity for custodial care, and that one who can "talk like that" and make so good a case, cannot be insane. Extreme moral perversion is often displayed, and I am satisfied that many, if not most of the cases of so-called moral insanity, would properly fall under this group. At times, excitement reaches an extreme degree, but this is not the rule, and a careful inquiry into cases will develop the fact that periods of depression and brooding have alternated with excitement. During such periods, these patients are remorseful for acts done in excitement. They are apt to shun the world, to brood and despair. Suicidal thoughts occasionally appear, but are rarely carried into execution, and the characteristic delusions of melancholia, of impending want, of spiritual degeneracy, of the unpardonable sin, are absent.

In melancholia with frenzy, we encounter a form of disease having certain characteristics like those of acute mania. In both mania and melancholia with frenzy, there are excitement, sleeplessness and disorderly conduct. These symptoms arise from a vastly different groundwork, however, and the key to diagnosis is found in the reason for their development. In mania, exalted emotions, fleeting percepts and changing hallucinations and delusions are responsible for their existence. In melancholia with frenzy, depressed emotions, fixed delusions of persecution and fear of injury disturb the patient's rest, and destroy all mental comfort. In both conditions, sensation is lively, attention is fixed with difficulty, and perception is false, but while in acute mania, impressions are fleeting and largely objective

and pleasurable, in melancholia with frenzy, they are of a fixed character, are both subjective and objective and painful. One suffering from acute mania finds it difficult to fix his attention, because of the rapidity with which percepts originating in impressions from without, come into consciousness; one suffering from melancholia with frenzy, because of concentration of attention upon that which is within. In mania, hallucinations are frequent and changing, and usually pleasurable; illusions are rare. In melancholia with frenzy, on the contrary, hallucinations are of a fixed character, and vary little in their expression; and illusions, particularly visceral illusions, which lead to picking of the face and hands to removed fancied vermin, are often observed. Ideation, reasoning and judgment are in both cases impaired, but while in mania, there are incoherency and fleeting delusions of a pleasurable character, in melancholia with frenzy, there is, as a rule, partial coherence, and delusions are of a fixed and distressing nature. One suffering from melancholia with frenzy may be destructive and disorderly, and make assaults, but the reason for the conduct lies in delusions of persecution and the disposition to protect himself from injury, and not as in mania in changing mental impressions and lack of inhibitory control. In mania, food is refused from inattentiveness, in melancholia with frenzy, because of the fear of poison.

It will be observed that the differentiation of these conditions rests upon accurate knowledge of the basal emotional states. The matter of diagnosis is of the utmost importance, because of the tendency of patients in melancholia with frenzy to self mutilation and suicide. They require care at all times, and while fearful of harm from others, will seek for any means of self-destruction, to escape the horrors of existence under the menace they constantly feel from without.

Periods of mental excitement appear in the progress of paranoia, a most interesting form of insanity, and one to which much attention has been paid in recent years. Excitement here occurring, is an incident in the progress of a chronic mental disease, and has its basis in painful delusions. The

paranoiac is from childhood, peculiar and eccentric. He is ill balanced and introspective, and develops unsymmetrically. A vague suspiciousness marks the earlier period of the disease. This may be very pronounced, but delusions of unworthiness or of religious unfitness are absent. He cannot tell why he is conspired against until later on in the disease. The melancholic, on the contrary, accepts his unhappiness as a punishment for sin, and feels deserving of all and more than all he receives. From the persecutory stage, through the period of transition in which some unimportant event, as an hallucination or the encounter of a significant passage in reading awakens him to the truth, to the state of well developed and abiding delusions, the paranoiac slowly passes. These delusions pertain strictly to the individual and his relation to society. They are logical and have direct reference to the persecutory period. He sees now, why he has been persecuted and calumny heaped upon him. All this was in the plan of the conspirators, who sought to destroy him, to defraud him of his inheritance, to prevent the knowledge on his part that he is the Savior of the world, or an earthly prince. He has triumphed over them. His inventions are to revolutionize travel, or heal all disease. His merits and position and genius are finally to be recognized.

In passing, it may be well to refer to the diagnostic points between this disease and the earlier stages of paretic dementia, a disease also showing extravagant delusions. The delusions of the paranoiac are logical, have been slowly developed, and are the outgrowth of a diseased personality. The "cranks" of the world pertain to this class. The paretic's grandiose delusions are illogical and changeable. He displays, even in the earlier periods of the disease, great restlessness and impracticable business schemes. He drops words from sentences and letters from words, in writing. Symptoms of inco-ordination of muscular movement slowly increase. He resents being placed under treatment, and demands his release from confinement. The paranoiac accepts confinement as part of the great scheme in his life. He is fated to be a martyr, even as was Christ,

or he is brought into his present situation by the special design of a Providence that foresaw a vast field of work for him to accomplish among the mentally sick.

In the progress of paretic dementia (general paresis) paroxysms of intense maniacal excitement occasionally occur. Such excitement is always furious and unreasoning. It is accompanied by intense heat of the surface, congestion of the head, injection of the conjunctivae, pupillary contraction or inequality and grandiose delusions. In the fully developed stage of the disease, the prominence of the motor symptoms will establish the diagnosis. Early in the malady, however, its recognition may be more difficult. Reference to the etiology (its dependence upon intemperate habits, syphilis, excesses and exhausting vices) may be of service to the examiner. Erratic conduct, neglect of business or extravagant speculations, improvidence and impracticable business ventures, the absence of an emotional period (the stage of depression preceding excitement) also furnish important diagnostic signs. It should be remembered, however, that in occasional cases, there is a well marked period of depression preceding the development of the disease, and that extravagant depression, visceral illusions, the belief that an extremity is of wood or ice, that the stomach is gone, that sexual organs are lacking, all these different symptoms depending upon disturbances of sensation, occasionally take the place of delusions of wealth and power, and lead to the confounding of the condition with melancholia.

It is a frequent and unfortunate blunder to mistake the epileptiform seizures of paretic dementia for those of true epilepsy. As a rule, the epileptiform attacks of paretic dementia are severe and of longer duration than those of idiopathic or traumatic epilepsy; they are more frequently attended by pareses and always by increased inco-ordination and mental obtunding. Now and again, however, the epileptiform or congestive attacks in the early stage of paretic dementia are of a syncopal nature. Such seizures occurring in a patient hitherto unaffected in a similar way, but perhaps coupled with conspicuous loss of memory and signs of mental failure extending over a period of weeks or

months should excite suspicion that the trouble with which the practitioner has to deal is a dementia of organic origin. There can be but little danger of confusing paretic and senile dementia, the former being a disease of adult life. I knew of a well marked case in a gentleman past seventy years of age, but this is the only one which I, at present, recall in a large experience with this interesting, alarmingly frequent, and lamentably fatal malady.

In the differentiation of paretic dementia from other forms, some importance may be laid upon the sex of the patient, the disease being relatively rare among women. The disparity in numbers between patients of the two sexes, however, is of late far less noticeable than in former years.

Alcoholic pseudo paresis is frequently mistaken for true paretic dementia. I have in mind at present, two cases in which the resemblance to paretic dementia was so strong as to lead to the diagnosis of the latter condition. In one which came under my observation within the past year, there were delusions of the most extravagant type, the pin-hole pupil, indistinctness in articulation, visceral delusions, and marked ataxia in gait and speech. Regis says that inequality of the pupils is scarcely ever lacking in alcoholic pseudo general paresis, and that permanent hemiplegia and aphasia are more frequent and more persistent than in true paresis. The pupillary aperture is often misshapen, the pupil is dull and cloudy, and visual acuteness is lost in the alcoholic type. In the remissions of general paresis, pupillary inequality is one of the first symptoms to disappear, while the embarrassment of speech remains in a greater or less degree. The reverse is true of alcoholic paresis.

Stearns says that, in the alcoholic paretic, delusions of grandeur are persistent, and rarely change, while in true paresis, these ideas change from day to day without order or consistency. He also says that the difficulty in pronunciation of certain words and sentences is greater, and the fibrillary tremor more limited in general paresis than in the other condition. In both, epileptiform seizures and local anaesthesias occur, but in alcoholic paresis, hallucinations of sight and sensory disorders are more marked than in

paresis. In alcoholic paresis, the patient frequently suffers from gastric catarrh and loss of appetite, while a ravenous appetite is almost an invariable accompaniment of true paretic dementia.

Bevan Lewis says that motor impotence, not inco-ordination or ataxy, is the distinctive feature of alcoholism of the motor sphere of the cerebrum. How does this motor enfeeblement betray itself? The earliest indication is usually a notable degree of fine muscular tremor, implicating in the first place, the fingers and hand, and gradually spreading to the arm; in the next place, involving the tongue, lips and articulatory muscles generally, and lastly, extending to the foot and leg. The tremor is always more marked in the morning, and may be dissipated by a glass of spirits; if at first not obvious, it may often be brought out by prolonged extension of the arm; any slight voluntary exertion tending to establish it.

With these opinions, I am practically in concurrence. The difficulties, however, in differentiating true general paresis (possibly of alcoholic origin) from alcoholic pseudo general paresis is at times very great.

It is difficult, also, to distinguish clinically, cases of syphilitic cortical degeneration from true general paresis. Spitzka says numerous attempts have been made to establish some criterion on the strength of which to be able to distinguish syphilitic from typical paretic dementia, but these do not always hold good. This coincides with my own experience. In a general way, however, it may be said that extravagant delusions are less apt to manifest themselves; that epileptiform seizures are frequently among the very early manifestations; that the duration of the disease is longer; that confusional states are more apt to occur; and that the memory sustains early and marked impairment in the syphilitic cases. In this connection, it may be of interest to speak of two cases of syphilitic dementia which have come under my observation, in which departure from the normal was manifested almost exclusively in the intellectual sphere, and chiefly in impairment of memory of recent events. In both these cases, there were mental

obtunding, dullness, sluggishness and inaptitude, but the leading characteristic of the disease was almost complete inability to register and retain recent impressions. Delusions and ataxia were absent.

Melancholia may be confounded with dementia after mania or dementia after melancholia (conditions of impairment consequent upon prolonged disorder of the mental operations, incident to the acute attack). The patient is apathetic, dull and abstracted. He finds it difficult to fix his attention and his mental grasp is inefficient. There is absence of delusions, and the patient under favorable conditions will recover. Too much stimulated, however, the enfeebled brain called upon for too great an outlay, confusion may result and mental impairment follow. It is in this stage that great harm is often done by removals from hospitals, and premature resumption of home and business life on the part of the patient. One convalescing from an acute mental disorder should be safe-guarded that he do not overstrain his mind at first, but by degrees come into its full exercise.

The danger of confounding melancholia with the depression of recurrent mania is not great if it is borne in mind that true delusions are not necessarily present in the latter condition, and if the history of the case is carefully followed.

The disease known as melancholia with stupor may be mistaken for dementia. The differential points between these conditions are summed up by Savage as follows:

<i>Melancholia with Stupor</i>	<i>Dementia.</i>
Development often rapid	Slow
Nutrition fails	Often good
Complexion yellow	Normal
Excretions deficient	Normal
Sleep bad	Good
Opposition to all movements	Passive
Appetite—refusal of food	Voracious
Suicidal	Not suicidal
Memory present	Absent

A form of insanity called katatonia has been described by Spitzka and other American authors, following the lead

of Kahlbaum of Görlitz, who first described it. I, myself, have not been able to distinguish this disease. Similar symptoms to those described pertain to melancholia with stupor, and may be seen in the depressed period of recurrent mania. Regis, writing of the condition, says:

"The majority of foreign authors recognize and describe under the name of attonität and Katatonia (Kahlbaum), conditions which are fundamentally, as Seglas and Chaslin have recently demonstrated, nothing else than melancholia with stupor under its different aspects, and in which predominate either the phenomena of hebetude, or spasmodic and cataleptiform symptoms."

With sincere appreciation of the growing interest in matters pertaining to psychiatry, displayed in recent years by medical bodies of this character, I close this imperfect review of an important subject.

OBSERVATIONS ON THE HISTOLOGICAL DEVELOPMENT OF THE CEREBELLAR CORTEX IN RELATION TO THE FACULTY OF LOCOMOTION.*

By DR. AURELIO LUI.

AS has already been mentioned in the introductory remarks published in this journal† my first observations in this matter were pursued in the physiological laboratory at Padua, directed by Prof. Stefani.

But at that time, using only the common methods of microscopical investigation and the usual staining reagents, I was able to determine only some facts of general character which could not be exactly interpreted.

In the animals then studied I was able to establish this remarkable coincidence, viz., that the complete development of the cerebellum was reached at the time when they respectively were able to assume an upright position and to walk, and that the different developments at the time of birth and at various successive periods, advanced *pari passu* with the more or less early dates at which such faculties manifested themselves.

Thus for example, the series of external granules in the infant at birth are much more numerous than in the sheep, and disappear much more slowly. In the chicken, which walks as soon as hatched, they are reduced to two or three rows of granules, which stain only slightly, while in the dove we find them still different.

*Translated by Dr. Susanna P. Boyle, Professor of Normal and Pathological Histology, Ontario Medical College for Women, Physician to Girls' Home, Toronto, from *Revista Sperimentale di Freniatria* Vol. XXII, Fasc. 1.

†*Riv. Sper. di Fren.* Vol. XX. fasc. II. 218. 1894. Translated in *Alienist and Neurologist.***

The modifications by means of which the cerebellum reaches its definitive form may be said to be, a gradual disappearance of the external granular layer, a gradual increase of the molecular substance, in a modification of the cells of Purkinje by means of which these, from being pyramidal, become globular owing to increase of protoplasmic substance, and the nuclei undergo a change of position, tending either to become centralized, or to be carried to the superior half of the cell, a change analogous to that observed in the pancreatic cells of Heidenhain during a state of activity.

But is this to be considered as of general application? And admitting this, what is the exact value to be assigned to the structural modifications which have been noted in the cerebellar cortex? Does the external stratum of granules disappear by a process of slow atrophy, or do changes of different natures take place within this layer? Does the increase in the molecular substance take place at the expense of these latter elements? Was it the cells or the fibres or both which gradually modified and developed, or were there only mutual relations between these two elements or none at all?

Since a fine and detailed examination of the minute anatomy of tissues is to-day a potent auxiliary, in the interpretation of physiological phenomena, it is necessary to fill all the above requirements, and thus to confirm by circumstantial anatomical facts the remarkable coincidence just noted.

Hence the need of new and more delicate investigations.

The researches were extended in mammifera to rabbits, rats and cats, the studies being pursued from the period of birth until that of walking; in birds besides repeating all the observations on the chicken which walks immediately after birth, I extended my researches in the same way to the sparrow and starling, which do not acquire the faculty until later.

In this new series of observations, besides the usual methods of microscopical *technique*, I used largely Golgi's

rapid black stain (viz., fixation of the specimens in a mixture composed of 8 parts of 2-5% solution of bichromate of potash and 2 of 1% solution of osmic acid, and successive impregnation with nitrate of silver), as that which is most successful for the nerve tissues of very young and especially of newly-born animals, if one is careful to avoid too long immersion in the mixture. I obtained the best reductions with the silver salt after an immersion of not more than sixteen or eighteen hours.

By this method which permits the perception of an important number of structural peculiarities, otherwise impossible to discover in studying the progressive development of the cerebellar cortex, it was possible to determine, first, whether the histological development bore any relation to the establishment of the walking faculty, and secondly, what particular changes took place in the individual elements of the cortex, and where this chiefly was effected; what the new elements which might have appeared, what the relations which might be eventually established between the individual elements, and what was the ultimate destination of the external granular layer, which was so manifest at some stages and which at complete development is reduced to a thin sub-pial strip.

In this way the studies served two ends at once. First, to find in the new researches ample confirmation of the preceding ones as well as better to define minutiae, and second, to contribute something to the study of the histogenesis and structure of the cerebellar cortex.

Staining by saffranin, acid-fuchsin, etc., after fixation in Flemming's osmio-chrom-acetic mixture, in the new animals, only confirmed my first observations. According to the different periods at which the faculty of locomotion develops, we find the cells of Purkinje progressively modifying their form as previously described, and the molecular substance, represented at birth by a more or less delicate streak, gradually increasing, while on the other hand the external granular layer is becoming gradually reduced in thickness. I was specially delighted to re-confirm this in birds as the preceding researches had here been defective.

But now we come to more minute details.

External granular stratum. Vignal's* theory that the external granules were to be considered as migratory cells destined to disappear gradually is certainly not based on a careful histological examination. If there were no others, the fact alone that this stratum is found in various stages of development at birth, and is variously modified in the ultimate development of the cerebellum, the different disposition as we shall see, of superficial and deep parts, and the evolutionary phases which are observed in the deeper portion, would be sufficient to condemn it.

Ramon y Cajal,† on the contrary, by the nitrate of silver method distinguishes some superficial elements which stain but slightly, and which are not clearly differentiated, comporting themselves thus like ordinary epithelial elements (superficial epithelioid cells), provided with a small and thick process directed in different ways. The deeper strata then of the superficial granular layer would be composed of fusiform bipolar elements horizontally elongated and provided with long expansions, apparently nervous in character, directed parallel to the long axis of the cerebellar lamellae, cells which pass through various phases, and emigrating contemporaneously to the molecular substance would reach the deep layers of the cerebellar lamellae, and there assume the characters of true granules. Lugaro‡ gives an almost similar description, though he regards the superficial epithelioid elements as the point of departure of the successive evolutions, admitting that they may be transformed into horizontal bipolar elements.

Retzius§ makes no effort to conceal the great difficulty he has experienced in staining by nitrate of silver, the elements of this embryonic layer; he found only small cells

*Vignal Recherches sur le développement des éléments des conches corticales du cerveau et cervelet. *Arch de Physiol.* 1888.

†Ramon y Cajal. A propos des certains éléments bynlaires du cervelet etc. (*Int. Manatsh.*, 1890.)—Id Les nouvelles idées sur la structure du syst. nerv. chez l'homme et chez les vertébrés. 1894.

‡Lugaro. Ueber die Hystogenese der Körner Kleinhirnrinde. (*Anat Anzeig.* 1894).

§Retzius. Biologische Untersuchungen. Bd. iii. Stockholm 1892.

provided with polygonal dentations, with short and thick processes, and often flattened as if by mutual compression.

By the employment of the chromate of silver coloration, we found in the chicken only a thin line corresponding to the small number of granules still remaining. There were also observed the radial fibres of the neuroglia cells arranged on a level or a little below the bodies of the cells of Purkinje, the terminal cones of which at the free surface of the cerebellum form the so-called *membrana anista* of Bergmann, some prolongations of the neuroglia cells of the molecular layer and some rounded elements analogous to those described by Retzius and Ramon y Cajal in the external stratum of nuclei.

In the cerebella of the other above mentioned new-born animals, in which the faculty of locomotion does not develop as soon as in the chick, and the embryonic layer in question therefore remains, this offers some remarkable features for consideration.

Already in the employment of the commoner methods of investigation, in sections made perpendicularly to the course of the cerebellar convolutions, it was observed that this stratum could be divided into two fairly well-marked zones.

The superior is composed of a series of nuclei generally rounded, pressed closely together, and regularly arranged.

Amongst these, and almost altogether in the lower part, are to be seen numerous karyokinetic figures which show very clearly when saffranin and gentian-violet are used according to Bizzozero's method: This fact was observed by Bellonci and Stefani* in the cerebella of doves at various stages of embryonic development.

Such karyokinetic forms are observed in various phases of their evolution.

In the inferior zone the nuclear elements are more separated from each other, in some parts are sparse, and have various forms and arrangements, often elongated and placed in a perpendicular direction, or parallel to the free

*Bellonci e Stefani. Contribuzione all'istogenesi della corteccia cerebellare. (*Memorie dell'Accademia di Ferrara.* 1886.)

surface of the cerebellum. They are somewhat larger than the preceding and stain better.

The distinction in the external granular layer of two parallel zones almost equal in thickness, made by using only the common methods is no new thing, having been already noted among others by Obersteiner; but the different morphological appearances deserve to be taken into consideration because, adding these data to others furnished by the method of black stain of Golgi, it is possible to obtain a better idea of the stratum in question.

In this stratum by Golgi's method we find clearly brought out some rounded elements of different diameters, provided generally with a short and thin process turned either upwards or downwards, and, especially in the more external part, directed toward each other. Of these, some represent the epithelioid cells of Cajal and Retzius, but the others must be of a different nature, representing only the large varicosities of the processes of the neuroglia cells, situated lower down, penetrating into the external granular zone and which, on account of the direction of the section, present themselves isolated or furnished with short peduncles. It is very difficult to distinguish between such varicosities and the epithelioid elements. But that such an interpretation may be true is demonstrated by the fact that in large varicosities, analogous to the preceding, there may be found sometimes along their length traces of similar processes and also even in the cell-body.

When it is not possible to demonstrate their origin from neuroglial elements (cells with radial expansions) we must regard these cells as segments of nerve fibres provided with those large swellings which form an embryonic characteristic, but their less sinuous course and great varicosity clearly demonstrate their nature.

Besides these we noticed in the same stratum, differently arranged in regard to the cerebellar convolutions, some cellular elements chiefly elongated in form and having several processes, two of which were constantly observed taking origin from opposite extremities of the cell; and still other elements which have a much greater development,

and a more distinctly cellular appearance than the preceding, and possess a more marked though somewhat scarce ramification of their processes. These latter are found at the limits of the molecular substance, having a regular cell-body and processes furnished with small spinosities. These processes deserve special mention owing to their arrangement which reminds one of the basket cells of Ramon and Kölliker. Along the short course of one of these we find dotted small isolated branches, generally deprived of their terminal expansions, and turned downward toward the cells of Purkinje, without however entering into any definite relation to these. Such elements correspond to the more superficial cells of the molecular substance, described by Ramon y Cajal, which still preserve their embryonic character, their descending prolongations not going to form terminal processes round the cells of Purkinje.

It does not seem to me that we err then, in considering that these represent only a more advanced stage of evolution of the elements first described as situated a little lower in the same stratum.

We cannot say whether there extend into these stratum nerve-fibres and processes of nerve cells from the underlying strata.

The results obtained by methods of nuclear staining and these new ones derived from the black reaction, complete and explain each other.

Besides the two zones there distinguished in the evolutionary forms of which we have spoken in the different appearances of the deeper zone, we have the superficial epithelioid elements, the large varicosities of neuroglia cell processes, especially in the more superficial part of the cortex, on the one hand, and on the other, the elements in process of evolution, which assume very distinct morphological aspects as we descend in the zone in question (boundary zone).

If observations with nuclear stains have led to the induction that the external granular stratum must be considered altogether as a simple germinative layer of the internal zone of the same layer, the better substantiated

experiments with chromate of silver enable us, on the other hand, to maintain that such a stratum is to be considered as only the deep part of the external zone; if thus we seem to leave in doubt the significance and destination of the inner zone of this layer, we can only maintain that it represents merely a stage of progress of those evolutionary changes which have taken place in the superimposed layer, by means of which such new elements are carried into molecular substance.

I certainly do not wish to give to my observations a too exclusive interpretation. Cajal's* investigations demand consideration, and he regards the horizontal, fusiform, bipolar elements found in the deep part of the superficial layer as being only a primitive form of the internal granules. They give origin by a process of unipolarization to the so-called vertical bipolar elements with T-shaped nerve processes and join in a process of migration toward the deeper parts. Besides this we have Lugaro's† theory, differing from Cajal's in that he considers the epithelioid elements as the primary form. With all this, however, it appears to me we must take into consideration the fact that some bipolar horizontal cells are found in the superficial part of the cortex together with other elements of quite different origin, but morphologically similar to them; and that therefore they may represent, at least in part, an initial stage of development of those cells found more deeply situated, toward the boundary zone.

In a more advanced stage of development the external granular layer is found to be markedly diminished, so that by the time the animal can maintain the upright position and walk it is reduced to a mere sub-pial strip.

Molecular Substance. The molecular substance in the newly-hatched chicken is found to be completely developed. The cells of Purkinje have a globular form, are provided with widely expansile protoplasmic processes and reach the inner limits of the small external granular layer. They are not as they have generally been described in the newly-

*Ramon y Cajal *Les nouvelles idées*, etc.

†Lugaro, *loco citato*.

born animals, incompletely developed (Gehuchten, Kölliker and others) but have reached their normal development. The cell-body is not flattened, nor are the protoplasmic processes serrated and provided with those large spines which are found in the embryonic cerebellum, but are very expansile and exhibit only a delicate dentation which is not rarely found in the adult organ. The rest of the molecular substance, resembling the cells, exhibits also the adult type. Very remarkable also are the basket-cells with their fine terminal tassels round the large motor cells.

If now we turn to the other birds, the sparrow and starling, which stand and walk in above fifteen days, we find a different appearance.

Besides the peculiarities noted in the external granular layer, we find the following appearances in the molecular substance; this is represented at birth by a narrow strip where it is rare to find the nerve cells peculiar to this stratum, unless we again enumerate here the elements previously described in the deep part of the external granular layer, which gradually come to form part of the layer in question. There is quite evident here a delicate fibrillar layer formed by prolongations from the cells of the intergal layer, from the cylinders of the cells of Purkinje and those of the neuroglial elements. The bodies of the cells of Purkinje are rough and above each is a tuft of short and thick protoplasmic processes, covered with large spines, which never surpass the inferior limits of the superficial granular zone.

The same appearances were found in the new-born cats, rats and rabbits.

In this regard we found very interesting also, from a general point of view, the connections of the nerve elements, a much debated question of to-day, the study of the nerve fibres of the molecular substance in the cerebellum of a new-born cat.

According to the best authorities and to Ramon's most recent researches the plexus composed of nerve fibrils terminating by free extremities in the molecular substance above the cells of Purkinje, forms in the new-born the so-

called pericellular nests round the bodies of these cells, and hence must be considered only as a stage of development of these. In other words the pericellular nests developing and pushing upward give origin to the plexus. In this way the nerve basket-network round the cells of Purkinje would be formed from the descending prolongations of the small cells of the molecular layer and not from the so-called pericellular nests.

I have observed in the new-born cat the contemporaneous existence of the plexus and the pericellular nests.

These last are formed from the complex intertwining of various terminal nerve fibres which are massed round the cells of Purkinje giving rise to a most intricate network. This result is very evident since the terminal processes of the small cells of the molecular substance have at this time not yet descended to form the baskets round the above-named cells.

The contemporaneous existence of the plexus and the pericellular nests would lead us then to admit, without positively denying that the latter may become transformed into the former, that they yet may exist independently of each other.

It is perhaps the complexity of structure which takes place in the process of development which renders the examination of these pericellular terminations a difficult one, while in the early periods the differentiation is more easy.

The importance of this fact will be seen when we consider the following, viz., that in this way there would arrive at the surfaces of Purkinje's cells not only nerve currents from the basket-network so often mentioned, but also and with equal intensity from the pericellular terminations coming directly from the medullary fibres.

But, returning to study the development of the cerebellum from a physiological point of view, we find that in these animals we can watch the progressive modification and completion of the structure of the molecular substance this varying in period of time as varies the epoch at which locomotor activity manifests itself.

These modifications consist in the rich development of

the protoplasmic processes of the large motor cells, which gradually extend themselves, multiplying and reaching to the periphery of the organ.

Internal granular stratum. In the cerebellum of the new-born chick there are especially manifest both the different gangliar elements and the complicated fibrillary plexus which are observed in the adult organ. The large cells of Golgi especially, do not show differences of any sort; they are for the most part polyhedral, or vertically elongated, possess an extensively ramifying nerve process, rich protoplasmic arborization and do not appear larger than a corresponding adult cell as has been observed generally in the cerebellum of new-born animals (Ramon-y Cajal). The small cells of this stratum have a terminal varicose arborization and not a simple thickening; besides there arise above their T-shaped nerve processes which branch horizontally and form largely the fibrillar stratum seen in the molecular substance; they also have their definitive form and disposition.

The nerve fibres which end in this stratum (*fibras musgosas*) are provided with terminal tufts by means of which according to Ramon and Kölliker, they would be brought into relation with the granules, but according to Lugaro are more probably thus brought into connection with the large cells of this same layer. All these fibres together with those which come from the medullary fasciculi, possess only in a limited degree that varicosity or those nodes which generally are very evident in the cerebellum of new-born animals; and in my idea the complete absence of such embryonic characteristics in a newly-born animal, is very remarkable when it is considered that they are found in other animals for some time after birth.

If, on the other hand, we observe the cerebella of the sparrow and starling at the time of birth we find these embryonic characteristics existing and these gradually disappear. We note as especially embryonic characteristics the varicosity of the nerve fibres, the incomplete formation of the terminal tufts of the *fibras mousseuses*, and those of the short protoplasmic branches of the granules. We should say

that this is the part of the cortex which is most developed.

Also in comparing preparations of cerebella treated with nuclear stains, and in various stages of development, I have observed that the internal granular layer undergoes much less important changes in its thickness than are undergone by the molecular substance and external granular layer. I however would not abide strictly by the opinion that the number of the superficial granules diminishes exactly in proportion as the deep ones increase, and also in this connection, it seems to me that we must guard against assigning a too exclusive signification to the horizontal bipolar elements mentioned above.

In the mammifera this stratum also presents the same characteristics of immaturity.

Gradually as the walking period approaches, all these various strata become modified and attain their complete development at the time when that epoch is reached.

We may thus formulate our deductions from these observations that in many other mammals (rat, rabbit and cat) as well as in the human infant and dog, the cerebellar cortex possesses at birth many embryonic characters which are gradually lost in such a way that the organ reaches its definite form when the upright attitude is assumed and walking begins; in birds, which walk immediately after birth, the cortex is already in possession of its ultimate form, while in others such development is attained at a period coincident with that at which such attitude manifests itself.

From these conclusions there issues a corollary, which is not, it appears to me, destitute of importance in the study of cellular, and especially of comparative morphology. That is to say, that in order to best appreciate the differences which are known to exist between the cerebella of different animals, and which were largely illustrated by Falcone* we must never forget that the evolutions of the constituent elements are accomplished more or less rapidly, and that therefore, independently of the various organizations, there may exist accidental differences arising from the varying

*Falcone. *La corteccia del cervelletto.* Naples 1893.

periods (though all early) at which the animals were under observation.

In summing up we would observe that the modes of development of the individual elements are very complex:

1. The whole of the external granular stratum cannot be regarded as an embryonic stage of the molecular substance; we must exclude those elements which are found in the superficial zone.

It is the deeper zone that we are able to demonstrate the elements which must be considered as phases of evolution of those found in the molecular substance of the adult. It is probable that the great increase in the molecular substance is attained by the above-mentioned superficial layer, which has no functional destination, undergoing a process of slow atrophy.

2. The elements which develop with the greatest regularity as the animal gradually nears the period of walking are the cells of Purkinje, and those which develop in the deep part of the external granular zone and ultimately go to form part of the molecular substance; the cells of Purkinje then have the significance of motor cells and the latter either owing to their processes establish intimate relation with these or, sometimes, according to some authors, present a system of association between the different gangliar elements. To these we must add the plexus which follows *pari passu* the rich development of the protoplasmic branches of the large motor cells, a plexus which, without denying that it may be regarded as having been evolved from the intercellular nests, has also been seen existing independently of them.

3. The internal granular stratum, whether or not the animal at birth has been gifted with the faculty of standing and walking, shows a state of advanced development.

4. The relations which it is possible to see become most clearly established as the animal gradually reaches the period of walking, are those which take place between the processes of the cells of Purkinje and ramifying plexus, on the one hand, and the descending processes of the basket cells and the bodies of the cells of Purkinje, on the other.

The minute examination of the separate layers of the cerebellar cortex has led us to discover progressive modifications of an interesting kind.

New elements are formed, existing elements are modified and perfected, new relations are established while the locomotor activity is gradually showing itself and becoming more complete.

From the point of view of the functionality of the organ, this coincidence is surely not void of interest.

SCRIVENER'S PALSY NOT SOLELY PEN FATIGUE.

By C. H. HUGHES, M. D.

Honorary Fellow of the Chicago Academy of Medicine, and of the British Medico-Psychological Society, Etc., Etc., Etc., and Dean of the Faculty and Professor of Neurology, etc., of Barnes Medical College, St. Louis.

FROM an intimate familiarity with a large number of cases of writer's cramp or, better, writer's palsy, and other forms of the so-called occupation neuroses, I have long been of the opinion that the occupation is not the sole cause, but simply the determining, and to a limited extent only, the predisposing cause of the special expression of those neuroses which we call by the several names of Scrivener's palsy, musician's paralysis, chorister's cramp, engraver's palsy, etc., etc., etc.

The usual sedentary, excitable, irregular and excessive nerve-strain life of the individual, blended often with associated brain and nerve exhausting dissipations, together with inherant neuropathic predisposition, being the essential conditions of the development of the neural instability and exhaustion neuratrophia, through which it is possible to have an occupation neurosis by excessive or even moderate use of a special group of muscles in the represented daily routine of a certain vocation.

The proof that local over strain is not the sole factor, is found in the fact that many cases of occupation neuroses are not the result of excessive over-work; unless we use the term as applied to the particular individual as excessive, which may be, and often is, exceedingly light at the time of the break down, such as would show unfavorable on the

average worker in the same field, and sometimes the local palsy appears after the individual from general debility has quit work for a time and again resumed his occupation for awhile only to discover his inability to use with former dexterity the instrument of his occupation.

The following record is a case somewhat in point:

The gentleman did not know he had this affliction to such an extent till making the effort illustrated below in my office. He is not and has never been a professional book-keeper or accountant. His vocation has been to sell goods in an exclusive cash store in a small interior city. He has been all his life at this occupation. He is married, is temperate and moderately regular in his habits. His tendon reflexes and physical functions generally are quite normal except that he has nervous dyspepsia and does not sleep as much as he ought. He has no intention tremor or no involuntary tremor of any kind. No eye defects; no lightning pains; no pupillary derangement; nothing suggestive of either posterior spinal or *en plaque* sclerosis. When he writes he supports his wrist and makes one letter at a time. He is naturally somewhat ambidextrous, though preferring his right hand, and both hands give the same expression to his hand writing. This is how he writes:

Many Men of Many Minds
Many Birds of Many Voices
J. H. H.
Many Men of Many Minds
J. H. H.

This gentleman has some sources of private worry; has been anxious to make more money than he has acquired; has kept steadily to an in-door occupation and become so

neurasthenic that the muscles in writing do not respond well even to a moderate demand, but display those irregular explosions of nerve force at the regular behest of the will which we are accustomed to speak of, when so displayed through the fingers used in writing, as Scrivener's palsy or writer's cramp.

In a large neurological experience I have encountered so many such cases where the local strain was not commensurate with the palsy, especially among choristers and pianists, and these facts, I think, justify this record.

The above is this patient's best writing.

*ARE AMERICANS DEGENERATES?

A Critique on Nordau's Recent Change of View.

By JAS. G. KIERNAN, M. D., Chicago.

Fellow of the Chicago Academy of Medicine; Foreign Associate Member French Medico-Psychological Association; Professor of Forensic Psychiatry Kent College of Law; Professor of Mental Diseases, Milwaukee Medical College.

ANALYZING Walt Whitman, Nordau[†] remarked, some years ago, that, "Whitman is a sycophant of the corrupt American vote-buying, official-bribing, power-abusing, dollar-democracy and a cringer to the most arrogant Yankee conceit." According to a recent interview by an American newspaper syndicate, Nordau[‡] does not now believe Americans to be degenerates. He asks: "Why should Americans degenerate? They have a new country, new opportunities, a boundless future, a restless and resistless activity; their eyes are fixed upward, their impulses are toward better and higher things, their ambition is healthier. How can Americans be degenerates?" He still stands by all he wrote in "Degeneration," but did not "mean to apply it to America." From cover to cover he has not said a word about America. He has not had the happiness to visit America and does not wish to evolve things out of his inner consciousness but from what he has learned from Americans and from what he has seen, Nordau does not think that degenerate is a word to

*Read before the Chicago Academy of Medicine.

† Degeneration, American Edition, p. 231.

‡ *Chicago Tribune*, Aug. 23, 1896. Press Publishing Co.

apply to them. "Degeneration has reference to Europe as distinct from America." The sweeping generalization of Nordau's criticism on Walt Whitman must therefore be understood in a Pickwickian sense only. Otherwise the assertion that "Degeneration from cover to cover does not contain a word about America" becomes palpably mendacious. Nordau has evidently been studying American literature, because of the great sale his vapid pot-boilers* had in the United States from the boom resultant on "Degeneration."

Anent Howells (Nordau's most severe yet most scientifically illogical critic), Nordau remarks, in a most tolerant spirit:

If I should do myself justice, considering the manner in which Howells has treated me, I should say something very severe about him. But I will not do that, I will rather speak what good I can of him. Unfortunately for Mr. Howells, when he began to write, Zola was a dominating power in the world of fiction and Howells followed his lead too closely and tied himself down to the theories of the naturalistic school. Mr. Howells would have done better if he had not followed that formula. Let him forget the theories he has adopted and give vent to his impulses as an artist and Howells is good. It is an excellent point in him that he notices great things and good things. He is of a serious mind and his readers can always follow him with the certainty that he will lead them upward. It is a bad point that he believes in a formula.

America has not produced anything better than Bret Harte. He is a Columbus. He discovered a great world of fiction. But Bret Harte has had the great advantage of telling new things, while telling them as well as such things have ever been told. He invented his own formula. He said to himself: I have the gift of telling a good story. Now how shall I best apply that gift? Shall I apply it to old things and familiar things? No, I shall seek something new. I shall apply my gift to telling the story of men placed amid absolutely new surroundings and subjected to entirely new influences and experiences. And so Bret Harte discovered the California of fiction. He was the first discoverer. The other story-tellers of to-day have simply followed him. The fact can be established by facts and

* *The Comedy of Sentiment and the Right to Love.*

dates. Bret Harte has set the fashion for the world of fiction. Every English novelist who has been borne to great success in recent years has consciously or unconsciously been an imitator and follower of Bret Harte.

There has lately been a great stir in America over Rudyard Kipling. But he has simply applied Bret Harteism to the British colonies in India. He has followed the lead of your Columbus.

It was Bret Harte who opened up the new world. It was he who showed the way to discover new countries for fiction. That is his formula and all the others are consciously or unconsciously followers and imitators. America exercises a very great influence upon modern fiction "through Bret Harte's formula." Look how they all fall in line. Take Zangwill's "Children of the Ghetto," which is a fine story, what is it but Bret Harteism applied to a strange people, to a new land of gold diggers in fiction. Take Hall Caine with his Manxman, take Hardy with his Essex people, take Haggard, take Ian Maclaren, take Stevenson, all followers of the American leader. Remember it was your countryman who originated the formula, and discovered new worlds of fiction. I do not know how far the fact is recognized in America, but if Americans do not recognize this and not credit Bret Harte with it, then they are not just to him.

It was given to America to furnish the new formula. Realism, naturalism, all these things are exploded but Bret Harteism rules. It is a kind of chemistry applied to the soul. Put such men, as we know, out of their familiar surroundings and social conditions, put them under new conditions, mix them up with fresh influences, test them with previously untried experiences for fiction which is now the ruling formula and see the result.

This has not been done before. Fenimore Cooper discovered his new world but it was not this world of Bret Harte. Cooper's was the world of the red man, the Indian, and he made of it what he liked. The reader had no test to apply to it but had to accept Cooper's red man as Cooper presented him. To paraphrase the popular expression, important if true, I may say of this kind of fiction, that it is interesting if true. In such a case as Cooper's, if, in the course of a few years, somebody discovers that the red man is not such a person as the novelist has depicted him, then the reader becomes ashamed of having been misled and says to himself: This is all an imaginary creation, this is no human character at all that I have been reading about. But Bret Harte's formula is to place men

and women whom we know and can measure amid strange and unfamiliar surroundings and influences and then we can say of their actions as he depicts them, I know this to be true, I know that this man or this woman would have done just this thing in such circumstances. And Bret Harte stands that test.

In Gabriel Conroy he tried another lode and was not successful. But I prefer not to speak of that, not to think of that. I measure him by his best work which is the just way to do. A rope is only as strong as its weakest point. But a poet, an artist is as strong as his strongest point. We shall see the same thing repeated with regard to all the English colonies as they are opened up. In each of them the formula will be applied and a new world will be discovered for fiction in the manner which Bret Harte has pointed out. This applies to continental European writers as well in certain cases and to a modified extent.

Nordau has suddenly discovered that there is more to the United States than "Yankee conceit and dollar democracy," but he has not delved deeply into American literature. The tendency, to which he refers, is in Brockden Browne* (the first American novelist) in Washington Irving†, in William Austin‡, in W. G. Simms§, in Hawthorne||, in Harriet Beecher Stowe¶ and others.

This principle, although Nordau fails to recognize it, is essentially that of Zola whose Rougon-Macquart series is an exemplification thereof; the scions of a degenerate family in that series are deliberately placed in different environments, Zola** explicitly avows this principle when he points out that:

The object of the experimental method in physiology and in medicine is to study phenomena in order to become their master. Claude Bernard in each page of his introduction comes back to this idea. He declares: All natural philosophy is summed up in this. To know the law which govern phenomena. The experimental problem reduces itself to this: To foresee and direct phenomena. Farther

* Arthur Mervin.

† Knickerbocker Sketch Book.

‡ Netterstrom.

§ Mellichampe.

|| Scarlet Letter, Blithedale Romance, Marble Faun, Ethan Brand.

¶ Old Town Folks, Pink and White Tyranny.

**The Experimental Novel.

on he gives an example: "It will not satisfy the experimental doctor, though it may the merely empirical one, to know that quinine cures fever; the essential thing is to know what fever is and to understand the mechanism by which quinine cures. All this is of the greatest importance to the experimental doctor for as soon as he knows it positively, the fact that quinine cures fever will no longer be an isolated and empirical fact. This fact will be connected then with the conditions which bind it to other phenomena and we shall be thus led to the knowledge of the laws of the organism and to the possibility of regulating their manifestations. A striking example can be quoted in the case of scabies. To day the cause of this disease is known and determined experimentally, the whole subject has become scientific and empiricism has disappeared. A cure is surely and without exception effected when you place yourself in the conditions known by experiment to produce this end. This then is the end, this is the purpose in physiology and in experimental medicine, to make one-self master of life in order to be able to direct it."

Let us suppose that science advances and that the conquest of the unknown is finally completed, the scientific age, which Claude Bernard saw in his dreams, will then be realized. When that time comes, the doctor will be the master of maladies, he will cure without fail, his influences upon the human body will conduce to the welfare and strength of the species. We shall enter upon a century in which man, grown more powerful, will make use of nature and will utilize its laws to produce upon the earth the greatest possible amount of justice and freedom. There is no nobler, higher or grander end. Here is our role as intelligent beings, to penetrate to the wherefore of things, to become superior to these things and to reduce them to a condition of subservient machinery. This dream of the physiologist and the experimental doctor is also that of the novelist who employs the experimental method in his study of man as a simple individual and as a social animal. Their object is ours, we also desire to master certain phenomena of an intellectual and personal order to be able to direct them. We are, in a word, experimental moralists, showing by experiment, in what way a passion acts in a certain social condition. The day in which we gain control of the mechanism of this passion, we can treat it and reduce it or at least make it as inoffensive as possible. And in this consists the practical utility and higher morality of our naturalistic works which experiment on man and which dissect piece by piece this human machinery in order to

set it going through the influence of the environment. When things have advanced further, when we are in possession of the different laws, it will only be necessary to work upon the individual and the surroundings, if we wish to find the best social condition. In this way we shall construct a practical sociology and our work will be a help to political and economical sciences. I do not know, I repeat, of a more noble work nor of a grander application. To be the master of good and evil, to regulate life, to regulate society, to solve in time all the problems of socialism, above all to give justice a solid foundation by solving through experiment, the question of criminality. Is not this being the most useful and the most moral workers in the human workshop?

Let us compare for an instant the work of the idealistic novelists to ours, and here this word idealistic refers to writers who cast aside observation and experiment and base their works on the supernatural and the irrational who admit in a word the power of mysterious forces outside of the determinism of the phenomena. Claude Bernard shall reply to this for me: "What distinguishes experimental reasoning from scholastic is the fecundity of the one and the sterility of the other. It is precisely the scholastic who believes he has absolute certitude who attains to no result. This is easily understood since, by his belief in an absolute principle, he puts himself outside of nature in which everything is relative. It is, on the contrary, the experimenter who is always in doubt, who does not think he possesses absolute certainty about any thing, who succeeds in mastering the phenomena which surround him and is increasing his power over nature." By and by I shall return to this question of the ideal which is in truth but the question of indeterminism. Claude Bernard says truly: "The intellectual conquest of man consists in diminishing and driving back indeterminism and so gradually by the aid of the experimental method gaining ground for determinism." We experimental novelists have the same task, our work is to go from the known to the unknown, to make ourselves masters of nature; while the idealistic novelist deliberately remains in the unknown through all sorts of religious and philosophical prejudices, under the astounding pretense that the unknown is nobler and more beautiful than the known. If our work be often cruel, if our terrible picture needed justification, I should find indeed, with Claude Bernard this argument conclusive: "You will never reach really fruitful and luminous generalizations on the phenomena of life until you have experimented yourself and stirred up in the hos-

pital, the amphitheater and the laboratory the fetid or palpating sources of life. If it were necessary for me to give a comparison which would explain my sentiments on the science of life, I should say that it is a superb salon flooded with light which you can only reach by passing through a long nauseating kitchen."

This principle of Zola is Nordau's "kind of chemistry applied to the soul," Nordau's eulogy of Bret Harte is hence most emphatic praise of the method Zola borrowed from the older English Novelists and Thackeray pined after. "La Terre," for example, seems a replica of "Arthur Mervin" albeit one depicts the French countrymen of to-day and the other the Pennsylvania rural of the last century.

A psychologist of the evolutionary school (which Nordau claims to be) could not but recognize this principle and its source were he acquainted with literature other than as that preeminent sciolist the sensation-monger. Nordau's seemingly peculiar omission of Hawthorne has a ready explanation. Lombroso (despite Hawthorne's Italian and French renown) was not aware of his existence. Even Macaulay shared this defect. In his diary Oct. 4, 1852, the latter remarked:

"I finished 'Uncle Tom's Cabin,' a powerful and disagreeable book, too dark and Spagnoletto-like for my taste when considered as a work of art. But on the whole it is the most valuable addition that America has made to English literature".

This great critic thus wrote a year and a half after the "House of the Seven Gables" and more than two years and a half after the "Scarlet Letter" which are as superior to "Uncle Tom's Cabin" as that is to "The Dairyman's Daughter". As a production of art the Scarlet Letter without superior in English. It is equaled only by two of Shakespeare's plays and as many of Scott's Novels. As Macaulay read everything and had a special interest in and fondness for novels, it does not seem improbable but that he read both the works of Hawthorne named. Macaulay however had a weakness for women authors and this, together with the anti-slavery motif of "Uncle Tom's Cabin" (to which he was peculiarly sympathetic), undoubtedly swayed him

in favor of that work. Hawthorne moreover did not become acquainted with Macaulay though he resided in England some years. He saw him at breakfast given by Mr. Milnes (now Lord Houghton) in the summer of 1856 whereof Hawthorne remarks:*

All through breakfast I had been more and more impressed by the aspect of one of the guests sitting near to Milnes. He was a man of large presence, a portly personage, gray haired but scarcely as yet aged and his face had a remarkable intelligence not vivid nor sparkling but conjoined with great quietude and if it gleamed or brightened at one time more than another, it was like the sheen over a broad surface of sea. There was a somewhat careless self possession, large and broad enough to be called dignity and the more I looked at him, the more I knew that he was a distinguished person and wondered who he was. He might have been a Minister of State, only there is not one of them who has any right to such a face and presence. At last I do not know how the conviction came, but I became aware that it was Macaulay and began to see some slight resemblance to his portraits. But I have never seen any that is not wretchedly unworthy of the original. As soon as I knew him, I began to listen to his conversation but he did not talk a great deal, contrary to his usual custom, for, I am told, he is apt to engross all the talk to himself. Probably he may have been restrained by the presence of Tickner and Palfrey who were among his auditors and interlocutors and as the conversation seemed to turn much on American subjects he could not well have assumed to talk them down. I am glad to have seen him, a face fit for a scholar, a man of the world, a cultivated intelligence.

Nordau's enthusiasm over Bret Harte has a very simple explanation; Harte was early taken up by a British literary clique (*en rapport* with the continental European set to which Nordau belongs) as a counterfoil to coeval English literatures. This English literary clique dominated by the spirit of Sydney Smith's sneer (*Who reads an American Book?*) long refused place to Hawthorne recognized to-day as the greatest master of English even by British Americanophobiacs. Hawthorne owed more to the New York literati than to the Boston literary clique whence these philistines drew their notion of American literature. One

**English Note Book.*

fact however demonstrates the scrappy nature of the knowledge of American literature possessed by Lombroso and Nordau, the increasing interest of the French in Hawthorne during the last three decades. In 1860 Emile Montigue* in a critical yet appreciative article viewed Hawthorne as a "pessimistic novelist". Nearly three decades later, Paul Masson† more truly spoke of Hawthorne as an illustrious American humorist", the term humor being employed in its old proper sense of mirth shaded by pathos. Fielding, Richardson, Smollett, Stearne, Sir Walter Scott, Thackeray Carleton, Lever, Lover and Hawthorne as well as other English-speaking novelists displayed the experimental tendency ascribed to Bret Harte alone by Nordau. This tendency is a characteristic of that celto-teutonic race called the Anglo-Saxon, recognized even by Nordau‡ and Lombroso§ through their Taine|| bias. A race characteristic, its expression naturally resulted in British America,¶ the United States, India and Australia. As Carlyle** remarks: "It is the grim humor of our own Ben Jonson,†† rare old Ben, runs in the blood of us, for one catches tones of it under still another shape out of the American backwoods."

Nordau remarks in this interview that "Heredity is a vain word. Descent and origin mean nothing. You are absolutely what environment makes you. You belong to the nation and the people of which you share the emotions."

This is a decided contradiction of the doctrine enunciated in the chapter on diagnosis in "Degeneration" where stress is laid on heredity alone. He follows the example of Lombroso who has lately shown, in this particular, a tendency to the evolutionary rather than his previous cataclastic view of genius. Acting on this principle, Nordau proceeds to

**Revue des Deux Mondes*, 1860.

†*Revue Bleue* Nov. 16, 1889.

‡*Degeneration* p. 75.

§*Man of Genius*.

||*English Literature*.

¶In Nova Scotia Judge Haliburton shows this tendency.

***Heroes and Hero Worship* P 31.

††*Every Man In His Humor*.

judge Americans from the standpoint of their environment. He first accepts Byron's view that:

"Tall were they beyond the dwarfing city's pale abortions".

"Americans in the first generation are perhaps squat and spare in body; in the next generation the children tower above their parents; in the third generation the grandchildren have grown to giants. Every generation seems to add inches".

This is very important if true. Giantism, Nordau to the contrary notwithstanding, is often an expression of degeneracy. Giants in stature are rarely giants in intellect. Nordau's belief that the "Americans will eventually become a nation of the Sons of Anak—giants in stature and in intellect as well", must be regarded, in the light of the researches on acromegaly and allied states either as satire or blarney. Nordau states that "since until about 100 years ago there has been practically no mixture of blood in the United States. It was all old English stock or at least Teutonic. But within the last century there have come streams of modern German and French Slavonic and Scandinavian blood."

Were the first assertion true it must be admitted that Americans are degenerates since they have departed widely from the typical Teutonic type. The assertion is however purely an expression of that grandiloquent teutonic cant that tests race by tongue, a test which, as Keane* forcibly illustrates by the following table, is tremendously fallacious.

PEOPLES	ETHNICAL GROUP	LINGUISTIC FAMILY.
English	Kelto-Teutonic	Teutonic.
Scotch	Kelto-Teutonic	Teutonic.
Irish (west)	Siluro-Kelto-Teutonic	Keltic.
Welsh	" " "	"
French	Ibero-Kelto-Teutonic	Italic.
Spanish	" " "	"
Germans	Slavo-Kelto-Teutonic	Teutonic
Bohemians	Kelto-Teuto-Slavonic	Slavonic.
Russian(many)	Finno-Slavonic	"
Bulgarians	Ugro-Slavonic	"
Hungarians	Ugro-Teuto-Slavonic	Finnic
Prussians(east)	Letto-Teuto Slavonic	Teutonic
Rumanians	Italo-Slavo-Ilyric	Italic.
Italians	Liguro-Teuto-Kelto-Italic	Italic.

*Ethnology.

Not merely are Aryan races in Europe mixed together but the blood of all has a Turanian dash. As De Foe recognized two centuries ago, these bloods were tremendously mingled in the British Isles. The North of Ireland (whence came an enormous emigration to the United States for two centuries ago and more) was a mixture of protestants from every race in Europe; Scotch covenanters, English puritans, French Huguenots, Palatinate Germans, Magyars, Spaniards, Italians and "Scandinavians". The Scotch-Irish are as raceless a chaos, despite their teutonic tongue as the Scandinavians who founded the Icelandic republic and its literature.

As Darwin* states, "there is apparently much truth in the belief that the wonderful progress of the United States as well as the character of the people are the results of natural selection for the more energetic, restless and courageous men from all parts of Europe have emigrated during the last ten or twelve generations to that great country and have there succeeded best."

Or as Nordau puts it: "With boundless room for expansion, with new ideals, with the restless activity and push bred amid such conditions, there cannot be degeneration. The race must become better. Americans grow taller and stronger with each succeeding generation and where is the limit to be fixed. It is all a matter of food and surroundings."

Other and greater reasons exist which Nordau should, as a logician, consider. As I pointed out to the Chicago Academy of Medicine a year ago,† the United States attracted, not merely the class upon whom Darwin so glowingly dilates, but that from their colonization the defective classes poured into the United States. Even the Puritan settlements brought sturdy beggars, criminals and other defectives from the crowd of offenders sent as servants to "his majesty's plantations". Large number of criminals were found not guilty if they left the State for New England. The stir of the west attracted hysterics, paranoiacs and other defectives as light-house lanterns do birds.

**Descent of Man.*

†*Alienist and Neurologist.* October, 1895.

The fact that these defectives have been assimilated and ameliorated proves that Americans are not degenerating. Nordau correctly assumes that American progress is all a matter of food and surroundings. Hitherto, as Macaulay pointed out in his criticism on Mill:[†]

The United States have been a country where the necessities of life are cheap and the wages of labor high, where a man who has no capital but his legs and arms may expect to become rich by industry and frugality. It is not very decidedly even for the immediate advantage of the poor to plunder the rich; and the punishment of doing so, would very speedily follow the offence. But in countries in which the great majority live from hand to mouth and in which vast masses of wealth have been accumulated by a comparatively small number, the case is widely different. Immediate want is at particular seasons a craving, imperious, irresistible. In our own time it has steeled men to face the gallows and urged them on the point of the bayonet. And if these men had at their command that gallows and those bayonets which now scarcely restrain them, what is to be expected? Nor is the state of things one which can exist only under a bad government. If there be the least truth in the doctrines of the school to which Mr. Mill belongs the increase of population will necessarily produce it everywhere. The increase of population is accelerated by good and cheap government. Therefore the better the government, the greater is the inequality of condition, and the greater the inequality of conditions, the stronger the motives which impel the populace to spoilation. As for America we appeal to the twentieth century.

It is scarcely necessary to discuss the effect which general spoilation of the rich would produce. It may indeed happen that where a legal and political system full of abuses is inseparably bound up with the institution of property, a nation may gain by a single convulsion in which both perish together. The price is fearful. But, if when the shock is over, a new order of things should arise under which property may enjoy security, the industry of individuals will soon repair the devastation."

It is a fertile source of error however to assume that in an English-speaking nation, political vehemence means revolution. The conditions described by Macaulay now exist rather than the optimistic conditions of Nordau. Yet

[†]Essays and Reviews Vol. I p 412.

they are much the same as sixty years ago when the country was threatened by the financial dominance of the United States Bank, whose boom of western real estate produced the panic of 1837, widespread distress and ultimate repudiation of state debt by a few states. The public morale is now so much higher that no such repudiation is possible. Property is not now regarded as theft even by the most seemingly revolutionary of the two great parties which wishes only to restore property rights destroyed, it claims, by legislation through which the people have created those Frankensteins, the corporations which are now devouring their creator. Such views indicate that peaceful change is most probable and that even should revolution occur, it must in the United States (as in other English speaking countries) assume, as in 1776 and 1861, a preservative type rather than the destructive one feared by Macaulay.

Nordau has found that literature exists among the "dollar democracy" later he will discover its science. His latest review lends much vraisemblance to the claim of Howells that:

"At first Nordau seems to be simply a bad-tempered, ill-mannered man, in the presence of intellectual conditions which he dislikes, with no other way of venting his hate but to bully and abuse everybody about. The note of insincerity however is so insistent that you end by feeling that even his bluster is put on and that he is only a clever quack advertising himself."

SOCIOLOGY AND THE REALISTIC NOVEL.

By INGEBORG TAUSTROM, M.A., M.D., Chicago.

THE spirit of the time changes and literature with it. How many years since the idealistic phases of life found their expression in literature. The real life was forgotten, and realism was considered vulgar. The subjects considered in the literature of to-day are problems not met with in literature of the past. And this has been understood by many authors.

The demand for truth and realism has created authors to supply it. This effort is a true child of our time. It stands in a close and organic relation to many other characteristics of this century. In almost every branch of art, science and literature—in women's dress even—we find the common trend to be a striving to resemble nature. The main strivings in the larger communities always determine movement in the smaller ones. A new direction has long been shown in the literature of the larger European nations, especially in France; active there before it was perfectly understood in the northern countries of Europe. Between this New School and the preceding one, there does not exist such a great difference as between the new-romantic and the so-called older school in the beginning of this century. The last authors belonging to the new-romantic school in France were realists. Even in Scandinavia, realism is more the result of influence from other countries, for example, France, than fundamentally a new school. As we know, most of the realistic authors in Europe of our day are

Pessimists. While Pessimism, by that name, is comparatively modern,—Pessimism itself is as old as the human consciousness. The German Pluemacher, in his work on "Pessimism in the Past and Future", devotes the first part of the book to a consideration of the historical development of Pessimism. He has a chapter on "Pessimism in Ancient Times," a chapter on "Pessimism in Christianity;" a chapter on "Pessimism in Science;" a chapter on "World-pain and the Poetry of Pessimism"; a chapter on "Philosophical Pessimism." What can be more pessimistic than the tone of Ecclesiastes in our own Bible? Take, for instance, the first three verses of Chapter Four;

"So I returned, and considered all the oppressions that are done under the sun; and behold the tears of such as were oppressed, and they had no comforter; and on the side of their oppressors there was power; but they had no comforter.

"Wherefore I praised the dead which are already dead more than the living which are yet alive.

"Yea, better is he than both they, which hath not yet been, who hath not seen the evil work that is done under the sun."

The difference between modern Pessimism and former Pessimism, is simply that the latter was the unsystematized instinctive cry of the human consciousness affirming that Pain in excess of Pleasure is the common lot of man; while modern Pessimism has its systematic exponents amongst the builders of systems of thought.

Schopenhauer, with his piquant style and trenchant wit, has given permanent voice and systematic form to that pessimistic feeling which, before him, had manifested itself only in detached cries or in a general undertone of sadness. Edouard von Hartmann, now the most prominent of living German metaphysicians, claims that his own system is a synthesis of the pessimistic Schopenhauer and the optimistic Hegel. Hartmann is best known as a pessimist. While he is willing to concede that this may be the best possible of worlds, yet he stoutly affirms that no world at all would be better than the best. The universal Göthe, while usually

classed with optimists, yet often shows himself deeply tinctured with pessimistic feeling. The difference between Göthe and the genuine "World-pain" poets lies in the fact that his sadness, as judged by his life, is a hopeful pain, while theirs is a despairing pain. Göthe, like all great poets, owes his own essential greatness to the wealth of shade of color, the deep inward penetration with which he paints unhappiness and the shadow sides of life. These alone afford the material to those poems which afford the most sublime and intensive enjoyment to the reader.

Established now in philosophy, Pessimism in one or other of its forms, has found disciples in many of the writers of our day. The Danish author Jacobsen is the most pessimistic writer in a time when almost everything appears dark. He is the only writer in all Scandinavia who is a representative of the analytical method. One misses in his works the individuality that is characteristic of many of the other writers of these countries. Jacobsen's books are undoubtedly the most pessimistic works published.

In one of them he tells the story of a young man. It is the story of undeveloped genius. The hero of this work is the fruit of two different natures. Heredity thus gives him two dispositions even antagonistic. In his childhood, his mother's influence was the greater, but later his father's spirit gets the upperhand. His aim was entirely too high. He tried to be one of those who make their own heaven and their own hell. He was wont to say that his soul soared high; it was the merit of his mother. Most of the time he but vegetated; only at moments lived. He was not true to himself. He invoked the aid of heaven without believing in heaven. He did not believe in anything, and finally lost all faith in himself. The writer strives to find what is needful to live a true life.

In another work, the same writer describes how a finely educated woman in high position gradually sinks into misery and vice. She has not the strength to resist temptation from without and within. Life has given her culture but not character. She feels responsibility neither for her own actions nor for her position and honor of her family. She

is introduced to us as a lady at Court; and we leave her as a poor gardener's mistress in a miserable cabin.

The problems treated of in modern literature are, as a rule, questions of the day. For instance, the relations between the sexes; competition between men and women; if marriage without love, or marriage after love has ceased, is a true marriage; under what circumstances divorce is to be allowed; the relation between capital and labor; co-education, and its moral influence on home and society; how society can be reformed; how the gulf existing between upper and lower classes in Europe can be filled; Hypnotism as a remedy; equal standards in chastity for men and women; diseases; heredity.

The question of the economic, spiritual and moral independence of women has never been more eagerly discussed than it is now. It forms the pictures of several of Ibsen's dramas treated in the most original and masterly way by this prominent Norwegian author. A critic and an idealist in one, he hates deceit, meanness and untruth, and denounces it vigorously. While discussing modern social problems, he must be counted among the realists. His idealism is felt in several of his dramas. "Notá" is by many considered as an attack on matrimony, though it rests on a high conception of marriage. His successive delineations of women show his increasing faith in her. Still it has been said of the characters of Ibsen that they are not personalities, but rather embodiments of moral and social problems never solved. But he does not say the final word; he leaves it to the future. A future when men do not bow their necks to wordly considerations. His influence is felt throughout Scandinavian literature.

Diseases have, as we know, a great influence on human life. No one can escape them. Compositions which reflect life must also treat of them. The reading of our young people in the beginning of this century was largely a reflection of the new-romantic school, in which the broken heart plays a great part. But we have very few instances of people dying from a broken heart. This possibly may happen to older people, but never to young deserted brides

and lovers. Göthe, in his time, was highly praised for his courage in breaking with tradition, when one of his heroines dies from consumption. *Marryat* and *Dickens* in their novels have treated of self combustion, on spontaneous combustion breaking out in the live body. The American humorists have also been interested in the question. Bret Harte personally studied the influence of alcohol on the human female in the gold-mines; while we have Zola, the leader of the naturalistic school in Europe, who has written a book for the very purpose of showing the effects of *intoxication*, taking his subject through the different stages of *delirium tremens* until death ensues.

The last scene of this work gives the impression that the author who has conscientiously noted every phase of the first stages of inebriation, shrinks from the consequences of the last ones—and cannot follow them up. Other European writers have also described the terrible effects of alcohol on the body.

In Denmark, the graphic sketches of H. Bang are studies from nature. He does not exaggerate, and science, as a rule, can endorse his illustrations. Even diseases of the nerves have played their part in realistic literature. Daudet, another leader of the natural school in France, in "L'evangeliste," and Björnsterne Björnsen in his drama "over Ene" show the influence of nervous exaltation. Daudet makes his heroine try to work out the salvation of her victim through belladonna and other poisons. But science does not recognize this way of producing physical nervousness.

In regard to Zola, it might be in order to say something about the *school* to which he belongs and about his *method*. The most eminent realistic authors of our times are naturalists; and they require that the novel as well as the drama be built on a foundation in complete harmony with the scientific character of our times. The originator of this movement, as we all know, is Balzac, the first French writer who, in his works, shows the influence of the good woman on society. Young girls without experience and fallen women had hitherto been heroines in French litera-

ture. Balzac was followed by Flaubert, known by his "Mme Bovary", an attack on young girls' education in convents and on marriages as they exist in France. In "La Vie", a renowned work, by E. Goncourt, he shows the consequences of young girls' ignorance of what life and matrimony require of them. Daudet in his "Sappho", dedicated to "My sons, when they are twenty years old," describes in an earnest and true way how a young man living in mingled love and lust, in close liaison with a woman of resplendent physical beauty, and of such checkered life and character as might be expected from one having been the mistress of criminals and of poets and artists, loses in the end, character and self-control to the degree, that, though finally meeting, loving and winning the love of a pure true girl, he feels in his innermost soul a permanent craving for vicious love; feels that the tie of marriage with a pure woman will not bind him; and shrinking from a dual life, with virtue and vice for co-ordinate poles, breaks with the girl he was to wed, and returns to his orgies with Sappho. He finds too late that vicious love meant for him the forging of a chain to bind forever. It is a truism that Science has, in our days, acquired a broad and solid foundation. It should be equally a truism that literature must, if it shall influence life, keep abreast of life,—abreast of its vital currents, with systematic knowledge of their trend. The first thing the scientist has to do, is to study nature and find out facts through experiments; see if his hypothesis can be proved a law. In making experiments with dead matter, the scholar can but study outward circumstances; but in experimenting with living matter, both the surroundings and hidden circumstances must be studied. And the hidden ones are much more difficult to deal with. But the laws that govern the motion of plants and animals are the very same that rule the realm of physiology. Hence the scientist having to apply all these laws to the different branches of psychology, finds these experiments to be the most complicated of all; for here the scholar is dealing not only with characters and passions, but with personal and social facts. Notwithstanding such

diversity of phenomena, he has to use the very same method to find the law which rule them. If Science has many difficulties to overcome in both fields, the physical and the chemical, how much greater obstacles shall she not find in psychical fields?

Zola's opinion is that a moral philosopher has not only to observe; he has even to make psychical experiments. It becomes very important then to distinguish the characteristics of man; and this has to be done by a very earnest examination of the laws of Heredity. If the moralist accepts the individual as given by nature, he still has to study, not only the surrounding circumstances, but also social facts that are intimately related to facts which are inherited. This procedure has been taken by Zola directly from medicine, which gradually has developed into an exact science through the efforts of the great physiologists, Claude Bernard at the head of them. Of him can be said that he has invented a new science; namely, *physiological pathology*. Pathology, deals not with the cause alone, but, rather with the prevention of diseases. The application made by Claude Bernard of pathology and medicine is made by Zola in dealing with spiritual phenomena. Even in the moral world, it is important not only to cure the evil but to check its growing influences. A moment ago it was said that the characteristics of man can be distinguished by the moralist only by a very earnest examination of the law of Heredity. Darwin's doctrine of the laws of Heredity are as well known in this country as in Europe. It is even known, I suppose, how he has been misunderstood by many writers who have made *Heredity* their principal subject. Science begins with investigation of laws. All that precedes has but one object, to prepare the way for this investigation. Unless we hoped that out of the mass of facts drawn from animal and human psychology, from pathology and history, some fixed and certain rule of practical application would be derived, these studies could hardly be regarded as other than barren pedantry. It is the privilege of the experimental method (so often charged with creeping on the ground; with being tied down to facts and restricted within narrow boundaries without a

horizon) to reveal to us what is universal; to exhibit to us laws in facts, and to demonstrate for us the seeming paradox that in the world, for the scientific mind, there are no facts but laws.

What has Science to say about *Heredity*?

Heredity is a biological law resulting from another law which transfers from generation to generation the attributes of physical and mental life. This law governs everything that is living, plants as well as animals, animals as well as man. There is not part of the human body subject to the laws of Heredity, and another part exempt from them. It has been said that man is a child of inheritance. The result of antecedent causes; that what he is, depends upon what his ancestors were. It has even been said that man is the creation of circumstances; that he is shaped by external surroundings. There is a truth in both these statements: and, when taken together, they give us what is known as the doctrine of Heredity and environment so much emphasized by the Herbert Spencer school of thought. It is true that children inherit physical and mental powers and tendencies from their parents. But man is more than a passion; receptivity, more than a clay to be shaped. Man is a conscious being. He has a large measure of self-determining power; and from this view, the doctrine of Heredity, instead of leading to the hopeless despair of fatalism, reveals the possibilities of a progress that would otherwise seem impossible.

Man is no longer bound by weaknesses entailed upon him by Heredity along faulty lines; he has the power to correct them. The doctrine of Heredity, instead of operating as a hindrance and discouragement to man, supplies the best, and as it would seem, the only conditions for the sure and permanent progress of the social order. By taking advantage of these laws, it is possible for individuals and society to advance by counteracting the evil and strengthening the good; and in this way, to set in motion continuous and cumulative processes of social reform. Were there not some such wise provision as this in the constitution of things, the work of each generation would die out with it, and there

could be no possibility of human development. What is the history of the world, the history of progress, but this? Has it not been a weary ascent through the ages; an ascent made possible only by the laws of nature and the laws of our own being, and all included in the laws of evolution? By the persistency of things as such, by their powers of reproduction and transmission thus carrying the seed of one generation over to the next—these, aided by the Darwinian law of the preservation of useful variations, are the instruments of the world's material improvement; whereby barbarism has been subdued and brought under cultivation, cities have been built, oceans navigated, and continents explored. It has been by taking hold of unchanging principles in music and art that we have beauty and song. It has been by seizing upon the eternal principles that a better civilization has been made possible, and, by the laws of persistency and inheritance, these great ideas have created their present and more fitting environments. Not by chance or accident has the social order advanced, but by reason, by method and obedience to existing laws. Man is thus a creation of culture, of capacities to be unfolded; and society is an organization related to an environment.

We may now see the double, reciprocal and dependent form of education by which the progress of the world is possible. It must be asserted and considered by the higher and corresponding forms of intuition. And thus are we brought face to face with the problem of the practical education of mankind.

What is education?

Education is not only instruction that comes from books and studies of art, science and literature; education is knowledge, experience of life, influence of a good and happy home. In short, it results from studying life and living life. For living life, man must learn to control himself. He cannot rise without guidance and control of the carnal will; his appetites and his passion will drag him down. He must rise by the power of reason and conscience. And this is true not only of the individual but of society. The lesson is that the only great work of this world is to

make noble men and women,—noble in body and noble in mind and heart. And this, too, not only by the help of Heredity, even in spite of Heredity; so that the world may grow from weakness and disease into health and strength; from poverty to plenty, from lowness to nobleness.

Literature has played a very great part in human development. The question of Heredity has been treated by many of the modern writers in Europe. No authors have put forth this question in a way so painfully strong as Zola and Ibsen.

Zola shows in a series of novels how the vices of avarice, drunkenness and lust increase and diminish, partly on account of the mingling of the higher with the lower and partly by the power of circumstance and education; as for instance, in his novel of "*L'Assommoir*." In his novel of "*Nana*," the fallen woman, he treats the subject in another way than does Dumas, who simply sympathizes with her. Zola, on the contrary, charges society with her unfortunate condition. In another novel, "*Germinal*," published a few years ago, he describes the hardships of the miners in France and Belgium. He shows how their children are born with dispositions to certain diseases, consumption, for instance. Its effects have already been felt. "*La Terre*" almost cost him his reputation as author and moralist by reason of its cynicism and lack of righteous indignation. All France showed displeasure, and even his followers objected to its tone. Happily Zola saved his name as author by the novel of "*La Reve*" recently translated into English. All phases of life described by Zola he has personally investigated. His person has always been pure and he has never taken notice of the attacks on his character, though the moral worth of his writings has been doubted. It seems to me that Zola has not been rightly understood in this country. Some time ago a female college had to close for the reason that the principal mentioned Zola's writings in lectures on literature. And in Canada, was quite recently made an *auto da' fé* of his books.

Ibsen has even treated of the question of Heredity in several of his dramas, but without indicating any remedy

for it. Bjornstjerne Bjornsen solves the question, to my mind, at least, in a satisfactory way. In his novel "Det Flager" he shows how serious defects are transmitted from generation to generation. Nothing is done to counteract them, and they increase, and become more and more pronounced. As a result of marriage between illmated parents, a child is born whose father was a dissolute and passionate fellow, continuing his irregular life even after marriage. During a quarrel with his wife, he beats her and ends by committing suicide. The widow was angry with her friends, because none had the heart and sense of responsibility to tell her before marriage of her husband's previous life, although they all knew about it. The mother tries to subdue the passions, which are manifested in her son. Still the boy has not only inherited the bad tendencies from his father, but also the good qualities of his mother. Early conscious of what he will have to contend with, coupled with the benefits of a good education, he is saved. The aim of the author is to show that "*Heredity although a condition, is not a destiny.*"

The death of Jacobsen's hero brings back to me the great Russian author Tolstoi and death as described by him. His hero also dies as he has lived. But he, as well as the author, believes in atonement and eternal life. In Anna Karanena the same writer shows as great a faith in woman's character when she is working for an aim and develops through a happy marriage. But A. K., who squandered her life in social pleasures and did not take up the duties of an ill-mated marriage, meets death, we might expect, as an outcome of such a life. Tolstoi, as Socrates and Rousseau before him, teaches that the royal road to health and happiness is in a life of simple habits, strict morality and outdoor activity.

Even Turgenieff, another great Russian author, shows his faith in woman. In one of his most valuable works, "Elena," T. foreshadows the condition of the Russian woman of the future. The heroine is strong-minded, patriotic, and her love is deep. For women of such strength and capacity for self sacrifice, Russia provides no fitting

mate. As Elena did, others may have to do, leave their native land, and among foreigners seek the happiness denied them. Elena leaves Russia, the happy wife of a noble-minded Bulgarian banished from his country. The two Russian writers recently named, portray very different types of women. Both feel deeply the darkness and gloom under which Russia is laboring. And both in Tolstoi's and Turgenieff's writings the hope of the future salvation for Russia, is centered in woman, not as she is, but as she is to be. There is no foundation for the thought that Tolstoi is a pessimist, for as we have before said, he is far from believing in annihilation, believing strongly and preaching the doctrine of development and immorality.

It must be acknowledged that in modern literature are many excellent works ennobling and strengthening the young. We must also recognize the love of truth and the efforts of the realists to *educate*. Most of them are of socialistic tendencies, seeking to win the sympathies and to awaken the feeling of responsibility on the part of the more fortunate for those less advantageously situated. They are struggling for the higher morality of which they feel our time to be in such sore need. Nothing can be said against the subjects chosen. The very atmosphere is full of them. But the principles at the foundation of many of the ideas brought out, to my mind, lead to false ideas of life, making it a burden, a punishment ending in suicide. Many of the realistic writers say that after death there is no existence except in succeeding generations. The body resolves itself into its component parts. A belief in the soul is either an idealistic fancy or a pious fanaticism. In short, their pictures of life are painted in too sombre colors. The cause of this may be that many of them have seen too little of the happy side of life. And the thought has come that realism is synonymous with pessimism. It may also be due to a deep sympathy with the weaknesses and wants of the present day and a strong feeling of opposition to everything delaying or thwarting a better future. He, who from such motives as this, is pessimist, is more worthy of our love and respect than he, who is pessimist because he himself

knows no suffering. Life presents no suffering alone, although, alas! there is enough of it. And we must not always reproach the realists for the eagerness with which they seize upon this fruitful thing. But if they give us too many gloomy pictures without a mingling of brighter ones, they are giving us a wrong phase of life.

This influence is unhealthy; for literature influences life as much as life does literature. A writer is not a realist merely because he takes his subjects from life, if he shows but the darkest and weakest sides and allows his characters weakly and passively to vegetate, blaming existing laws of nature and limitations of the will, and preaching the doctrine of annihilations of the whole. If this were the doctrine of realism, it would have no more value than the hyper-idealistic or pietistic teachings. The one extreme is as harmful as the other, paralyzing the power to act and lowering the moral tone. Against this mesalliance of realism every true friend of it must protest. Against realism itself, we may say that it is too willing in detecting evil, and not always ready to recognize what is pure and noble. Its atmosphere is often too tainted for healthy life and art to flourish therein. Its teaching may be regarded as a medicine so strongly charged with poison as to be used only with the greatest precaution, lest the disease prove more painful than before, or even fatal. It has been said that the realists lack fancy, are too logical, and that their analysis has killed their feeling. To this we cannot agree. If it were true, the writers of the present day were fit only for newspaper work and historical writing. It has even been said, and perhaps truly, that the works of the realistic school of modern literature are not the best reading for young people, particularly for young girls. Be that as it may, the first thing to be considered in determining the value of a literary production, is its artistic and moral value as a whole. Later we may determine whether, in detail, it be profitable reading for immature minds; for it is a fact that in many works the details are such, that, detached from the whole, they may produce effects never designed by the author, as, for instance, in several of Zola's

writings. As to Daudet's "Sappho," it may be a drug of the poisonous character above described,—seeming rather to rouse than to subdue the passions. Such reading can only be safely indulged in by those so strong in mind and character that their morals cannot be affected by such influences. To those who have fears in regard to familiarizing the young with the subjects treated of in modern literature, we would suggest that they show the same care in their choice of subjects for conversation in the home circle and social gatherings. "*Anna Karanena*" is more wholesome than gossip about divorces and ill-mated marriages. The reading of "*Det Flager*" is less harmful than half uttered and partially understood suggestions regarding physiological facts. The time is past when innocence sought protection from ignorance. Literature, as well as the spirit of the time, now seeks to give young womanhood the weapons she needs for her protection by teaching her what marriage and life *require* of her. That the realists of the present day are not all that they should be is proved by the fact that we have a realism which is neither true nor sound; not true because it misses the idealism that really exists in life and because it erects wrong phases of life (existing but fragmentarily) into typical phases of life; not healthy because it depresses rather than elevates us. Notwithstanding its errors let us believe that realism will carry the literary banner of the future, although the inscription thereon is not yet what it should be. With a truer inscription the goal will be sooner reached, for it predicts moral, literary and artistic progress.

THE SURFACE THERMOMETRY OF THE HEAD IN DISEASES OF THE BRAIN.*

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WHAT is the present value of surface thermometry as a diagnostic aid in diseases of the brain? Such is the question which I shall attempt to answer, on the basis of well known scientific facts, recorded experimental data, and some personal observations.

The very first step must be an inquiry into the thermogenic conditions of the normal brain and its encasement, together with the physico-chemical laws and conditions by which they are modified. The classical researches of Lombard, covering some 6,000 observations made with the most accurate thermo-electrical apparatus and scientific care showed an extreme range of from 94.8 F to 97.8 F or a variation of 2.7 F. This probably represents about the ordinary limits under normal conditions. Such extreme ranges as those found by Schiff must be set down to remarkable idiosyncrasies or occult morbid processes. This range, it will be observed, is no greater than that found in axillary and rectal temperatures, although observers differ greatly in regard to the latter. Thus Finlayson found a range in the general temperature of 3.6 F., while Paul Bert places

* Read before the Delaware District Medical Society, at Dunkirk, Ind., July, 1896.

the normal excursion 1.8 F. It would thus appear that the surface temperature of the head, with proper precautions, varies quite as little in health as that of the mouth or rectum.

The temperature of the air, as shown by Lombard has much to do with the surface temperature of the head. Of course it is refrigeration that is mostly to be guarded against; and Lombard found that with the average temperature of the air ranging from 44.6 F. (7.01C) to 65. F. (18.34C), the surface temperature of the head varied from 93.5F. (34.19C) to 96.4 F (35.79C) a range considerably lower than found in warmer atmospheres. It is therefore, I think, advisable that the temperature of the room in which surface temperatures are clinically studied should be 80.F., or more; and should be free from drafts; and, it seems to me, the entire head should be enveloped in a somewhat impervious covering to prevent refrigeration of areas of the scalp contiguous to the point of observation, which, owing to their free vascular connection would certainly influence the latter. The disc of the thermometer must be well protected from the air by a non-conducting pliable material, through holes in which the stem should project. Ample time should be given for perfect equalization of the temperature of the thermometer and scalp. The pressure of the thermometer upon the scalp should be quite firm, with a view of producing anemia of the latter, so that the thermometer will be influenced as little as possible by the blood in the scalp.

At the moment of reading, the pressure of the thermometer, if it is not self-registering, should be relaxed until the column of mercury ceases to fall. My own observations have been made with non-self-registering thermometers and while I have had no experience with the self-registering surface instrument I am of the opinion that the former kind is to be preferred, because of the fact that pressure would force the column of mercury up, and the self-registering index would remain up while the unbroken column would recede to the proper level. While this source of error is said to have been reduced to a minimum in Gray's modification of Seguin's thermometer, yet that it still exists

is indicated by the precautions constantly urged by observers that the pressure of the thermometer upon the scalp should be equal—a practical question of very difficult solution. The hair ought to be closely shaved or at least closely clipped. The electro-thermal apparatus is of course more delicate for scientific investigation, but I agree with Amidon that it is too delicate for ordinary clinical purposes. As clinicians we are not practically concerned with a variation of one thousandth of a degree, however interesting it may be in psycho-physiologic research.

Having given due attention to the technique, which is troublesome and laborious, but which the results are in large measure vitiated, what we really ascertain is the temperature of the skin at some selected spot, and its value hinges entirely upon the accuracy with which it indicates the relative (but not necessarily the absolute) temperature of the underlying portion of the brain. We have to deal with very complicated conditions. The brain under normal conditions notwithstanding its large mass and highly organized structure, does not appear to have a very high temperature. Davy long ago declared that thermometers registered lower when plunged deeply into the brain tissue through the foramen magnum of decapitated animals than when introduced into the rectum. His observations however preceded the era of scientific exactness and are therefore open to criticism; but Schiff plunged electro-thermic needles into the brain tissue through holes drilled into the skull of curarized and alcoholized living animals and obtained temperatures lower than those of the surface, which I have already quoted from Lombard, and which it will be remembered are much the average of axillary and rectal temperatures.

These are facts and should be kept in mind in estimating the value of absolute cerebral temperatures. But whatever may be the exact absolute temperature of living normal brain tissue there is a considerable amount of heat constantly generated, the surplusage of which in order to keep the brain at the normal temperature, must be removed in some manner. A definite proportion of it, impossible of exact determination, is carried away by the venous blood.

The remainder can only escape by conduction towards the surface. But it meets in its pathway, first in the pia-mater, then in the dura-mater and diploe, and finally in the remarkably vascular scalp, myriad networks, or almost walls, of circulating blood, which will absorb and carry away another modicum of this heat. In thermometric observation Schiff has attempted to get rid in a measure of the intervening scalp blood by squeezing it out by pressure between the skull and thermometer. The active vascular network of the diploe and meninges cannot, of course, be thus influenced. The limits of time forbid the further pursuit of these physical problems, except to remark that, after making due allowance for all these conditions, a certain indefinite quantity of heat passes directly to the surface, and distinctly influences the temperature of the overlying skin. The influence of warm water thrown within the brain membranes in raising the temperature of the skin in the cadaver has been experimentally demonstrated by Maragliano; the circulating blood of the living tissue can only diminish but cannot prevent its occurrence. It has been calculated upon purely physical grounds that if the surface of the brain is raised one degree, one half of that heat is lost in the blood between brain and skin and one-sixth in tissue resistance, thus producing a rise of one-third of one degree on the surface of the head.

We find therefore that what we have really registered with our surface thermometer on the scalp, is the absolute temperature of the skin, which is the resultant of all the chemico-vital processes occurring between it and the brain, and within the latter, minus the heat lost in transit; but that it is palpably modified by the heat of the brain, which modification is readily estimated by the surface thermometer.

It is probably very nearly superfluous to remark that local morbid processes in the cranial wall must be excluded as causes of surface temperature modifications before the latter can be assigned a definite value in the diagnosis of intra-cranial disease.

The functional processes of the brain must have a considerable influence upon the amount of heat generated, and

consequently upon the surface temperature of the head. This has been proven experimentally especially with reference to intellectual processes. Intense mental effort, sustained for an hour or more only produces, according to Lombard, a rise of from 1-15 to 1-20° F.,—too small to be of practically clinical interest although of high scientific value. Gray however found a much greater rise—as much as 2.6 F. Amidon obtained remarkable elevations of two degrees over the brain centres of certain groups of muscles by having these muscles thrown violently into action for some minutes; the experiment being undertaken to test the hypothesis that the functional activity of the centre would raise its temperature. His results were not sustained however by Paul Bert nor by Francois Franc; while Lombard found the average temperature lower rather than higher, though more frequently un-influenced. We therefore conclude at present that, while for other and various reasons a quiescent state should precede and accompany the clinical study, yet we need not fear the disturbing influences of the normal functional process of the brain in any event unless excessive and prolonged.

We have still to inquire in how far a local process, producing a rise of temperature on the surface of the brain at some particular point, will be indicated by a local rise in the temperature of the overlying scalp. Here again Lombard's extensive and careful investigations seem to reliably indicate the normal variation between the two sides, and different regions of the same side. I can not enter into details, but must say briefly that the normal surface temperature of the two sides of the head is seldom equal; that one side is as liable to have the higher temperature as the other, contrary to Broca and Gray who found the left side of the head slightly warmer in right handed persons; and that the ordinary differences observed ranged from 1-40 to $\frac{1}{2}$ F. with rare extremes of 0 to 1.18 F. Practically the same variations, though of course somewhat less on the average, were found between different regions of the same side. In brief the thesis seems experimentally established that the normal differences of temperature which constantly occur

between well defined, but not too small areas of the brain surface, are relatively indicated on the surface of the head.

What then may we expect to find in the way of temperature modifications as the result of morbid processes within the cranium. The laws of pathology are the same, subject to local conditions, here as elsewhere. In acute metritis for instance, Hunkiarbeyendian, in his Paris thesis, records the temperature of the interior of the uterus as 103.1 F., while the axillary temperature stood at 101.3 F. Clinical observations of a striking character in reference to the brain are not lacking. Thus Dr. Mary Putnam Jacobi records a case of tubercular meningitis with temperature of 101.8 F., over frontal, and 104-105 F, over occipital region where tubercular processes, especially in the pia, were active. In one case of meningeal hemorrhage, verified by autopsy, I found temperature over frontal regions 103-4° F, with axillary temperature of about 100 F. In several cases of brain tumor which are still under my care and upon which I have made several hundred surface temperature observations, the most capricious fluctuations have been observed, although the temperature of the head has been almost constantly abnormally elevated. One of these cases gave such apparently contradictory results that it seems worth a reference. It is that of a case of brain tumor for the study of which I am indebted to Drs. Hatfield of Bluffton, and Wheelock of Ft. Wayne. The diagnosis was made of a neoplasm in the left pons region, probably tubercular in character; the diagnosis being based briefly, and in part, upon double choked disc, and involvement of fifth, seventh and eighth nerves. To my surprise the thermometer showed a temperature on the R side $1\frac{1}{2}$ F. or even more above the L. The preponderance of the high temperature since that time, while it has shifted many times has probably been in favor of the right. The only significant thing has been that it is almost constantly elevated, while the temperature under the tongue is usually normal. In such a case with only one or a few temperature observations, the focal symptoms must of course decide the diagnosis. It shows however as Seguin pointed out a quarter of a century ago, and as every competent clini-

cian recognizes to-day, that a single thermometric observation should rarely, if ever, be relied upon as an important factor in diagnosis. I have not the time to speculate upon the anomalies of this case. They are probably to be explained by the very deeply seated location of tumor; by the possibly or even probably multiple character of the growth, thus influencing the temperature locally at different points and through the general circulatory derangement or disturbance of the cerebral heat centers. In another case under the care of Dr. C. B. Steman in which upon other grounds I made the diagnosis of a tumor in the right Sylvian fissure, the diagnosis was confirmed by finding the surface temperature constantly from one to one and one-half degrees higher than upon any other point upon the head. In this case, still living, operation was advised, but declined. Dr. Mills found in a case of brain tumor an elevation of 3° degrees. Such a variation is strictly within the physiological limits. However it is probably true in local as it certainly is in general thermometry, that a level temperature near the higher limits of the normal excursion is morbid. In the light of this fact numerous observations should be made, and a relatively slight elevation if found persistent, should be given considerable weight, inasmuch as it means much more at the surface of the brain than at the surface of the scalp.

Lowered temperatures are scarcely less important than elevated ones. Thus Broca found a fall of 4 degrees (C?) over the area of a brain embolism. Indeed important aid might in some cases be derived from surface thermometry in the differential diagnosis between embolic and inflammatory softening. In a case of inflammatory softening recently referred to me by Dr. Merriman of South Whitley, Ind., the temperature over the softened area was from 4. to 6. F. above the normal. Although therapeutics is not within the scope of this paper I cannot refrain from remarking that in this case the persistent application of the ice bag not only lowered the temperature, which might be plausibly said to be simply due to frigeration of the scalp, but would keep it down for from 12 to 20 hours, after which again it would

slowly rise to about the same point as before; not reaching it, however, until after the lapse of 24 to 48 hours. Such an observation clearly indicates the value of surface thermometry as a guide to therapeutic procedure in certain forms of brain disease, as well as the lasting effect of ice applications on the temperature of the brain itself.

In the light of these facts, and others equally important, but omitted for the sake of brevity, what is the fair, conservative diagnostic value of surface thermometry in brain disease? Bearing in mind the oscillatory waves of both morbid and normal human temperature, first established by the genius and tireless labors of Wunderlich, and later specially elaborated with reference to the head by Broca, Schiff, Lombard and others, we are prepared to exercise caution in accepting these observations in support of diagnosis. There is also much to be worked out in reference to the thermal influences of the sympathetic, and of cerebral heat centres. Schiff, for instance, asserts that these temperature fluctuations of the head cease upon section of the sympathetic, irritative and paralytic lesions of which may therefore be fairly assumed to exercise a perturbing influence upon cerebral temperatures. Notwithstanding these obscurations, however, and notwithstanding the disturbing influences of environment upon cephalic, as upon other peripheral temperatures the fact appears perfectly patent to me that we can no more afford to neglect surface thermometry in the study of brain disease, than we can axillary, oral, and rectal temperatures in the study of general disease. It is as true in one case as in the other that we will often get negative and occasionally paradoxical results; that the temperature observations must be compared with focal and other symptoms and given now a high and now a subordinate value; and that, in the one case much more than in the other, a somewhat laborious technique, and scrupulous regard to environment, are essential to the attainment of trustworthy results.

The surface temperature will not any more than will a focal symptom, determine the pathological nature of a cerebral lesion. It will, however, give us information upon

two points, viz: the vascularity of the tissue, and the intensity of tissue matabolism. These are both increased in inflammatory processes, the latter being the more important factor, as first shown by the observations of Simon and verified by Weber, that the focus of inflammation is hotter than the blood emanating from it. The surface thermometer will not tell us then whether or not there is a tumor, an abscess, or a hemorrhage, for with these conditions the temperature may remain within the normal range; but if the phenomena of inflammation are associated with the tumor, the abscess, or the hemorrhage, as occurs to a greater or less degree in practically every case, and just in the proportion to the extent that this occurs, we will have increased vascularity and intensified metabolism, with the necessary rise of temperature of the surface of the brain which will be relatively indicated on the surface of the head with the certainty of physical law, but in varying degree, and subject to modifying influences.

I can not enter into the detailed discussion of the surface thermometry of the head in particular diseases. A few general statements must suffice. In meningitis, of the acute or subacute type, so far as recorded observations indicate, the surface temperature of the head is invariably elevated out of proportion to the general temperature and to the greatest degree over those areas in which the inflammatory process is most intense.

In cases of brain tumor the surface temperature is elevated in proportion to its proximity to the surface, and the rapidity of growth, and consequent irritative phenomena. The temperature is often within physiological range, as is the general temperature in many cases of pulmonary tuberculosis, in which case it is necessary to study the temperature curve for a considerable time when even a slight but practically constant elevation of the line can be assigned a definite value. What has been said of tumors is true in a general way of abscesses and hemorrhages. In embolism the temperature as already stated has been found lower over the embolic area. In regard to insanity the evidence is somewhat conflicting, though observers are generally

agreed that there is an elevation in acute mania, as shown by Maragliano, Seppilli and others. But I cannot proceed further along this line, and will conclude by remarking, that if this essay has succeeded in more pointedly directing the attention of my colleagues to an important aid in a difficult field of diagnosis, it has achieved the purpose of the writer.

SYPHILIS AS AN AETIOLOGICAL FACTOR IN THE PRODUCTION OF LOCOMOTOR ATAXIA.

DR. C. TRAVIE DRENNEN, Hot Springs, Ark.

SYPHILIS as an ætiological factor in the production of locomotor ataxia has been both widely and interestingly discussed in the years that have so recently gone, and one cannot but take cognizance of the general trend of scientific thought to hold accountable syphilis in a very large and growing per cent. for the production of this disease. We may truthfully assert that the great majority of writers upon this subject at the present day are practically with one accord in their belief. There is, however, a certain respectable minority who do not concur in such opinion. Therefore, might it not be well at the present time to consider some of the reasons upon which some of the majority base their opinions and also ascertain if we possibly can why the minority can not be brought to view the subject in the light the majority see it. Those who believe in syphilis as a cause or an underlying condition in the production of this disease have and make as a basis for such belief some of the following conditions and statements:

First, that a great and large per cent. of all tabetic subjects present a history of syphilis most probably ranging from forty to sixty per cent.

Second, the occurrence of symptoms of tabes analogous to syphilis—such as ocular palsies, pupillary reflexes and lightning pain.

Third, the beneficial effects of mercury and the iodides in relieving many of the symptoms of tabetic disease.

Fourth, that syphilis in its advance stages produces chronic proliferation of connective tissue with sclerosis in various organs and that it further provokes specific arterio-sclerosis and that these two factors acting together would cause degeneration when attacking the posterior root at its weakest point.

In consideration of the first statement it must be admitted that a direct or indirect history of syphilis will be found in a large proportion of tabetic subjects, but this fact proves one thing, if any thing at all, that we as a race are fast becoming a nation of syphilitics. When it is remembered that a great majority of tabetic subjects are men from thirty to forty years of age, strong, powerful and otherwise healthy and denying themselves nothing that their sexual appetites demand and to that added alcohol and tobacco to fire their already perverted passions and knowing that such men must necessarily be more exposed to syphilis, may we not reasonably account in this way for the large per cent. of syphilitic histories occurring in tabetic subjects and at the same time hold accountable king alcohol, tobacco and sexual excess largely for the damages done to the nerve centers? In discussing the second statement, it is again true that many symptoms known to be syphilitic also occur in locomotor ataxia; and we confess that we can hardly understand why it should not be so, when it is known that there is not a single organ or constituent part thereof, that is exempt from the ravages of syphilis. And as to the third statement, that many of the symptoms of locomotor ataxia are relieved or even ameliorated in any sense whatever by antisyphilitic treatment we desire to question, and would suggest that out of one hundred capable observers belonging to the rank of the majority, there would not be ten per cent. who would agree or concur in that assertion, in fact we doubt if there would be five. And now as to the fourth statement that advanced syphilis does produce chronic proliferation of connective tissue with sclerosis of various organs and further provoking specific arterio-sclerosis we most assuredly admit, but would invite investigation and suggest that there are other causes which would account

for this same condition, viz: arterio-sclerosis. Now coming to the proposition as a whole.

Be it remembered that of all diseases with which we are familiar there is not one that is more amenable to treatment upon the whole than syphilis, and such being the clinical facts which present themselves, is it not, to say the least of it, to be marveled at, that a disease being produced or measurably produced by syphilis, has not in the cycle of years ever as yet been arrested in its progress for more than a day, figuratively speaking? It will be admitted that syphilis of the spinal cord and brain are not only amenable to treatment but in certain instances are actually cured so far as we are able to ascertain. To the contrary the tendency of tabetic disease is progressive to-day, and ever has been so far as we have been informed. It may be truthfully said that when degeneration has once been thoroughly set about that it may continue regardless of what the original cause or causes may be or may have been; but when we remember again that many cases of tabetic disease have fallen early under observation of most capable practitioners and skilled diagnosticians who have subjected these self same patients to most vigorous antisyphilitic treatment practically without result, we say (far as yet we have never seen a well authenticated cure) truly this is the riddle of the Sphynx. It is believed that few women, comparatively speaking, enjoy the sexual act to that extent which is characteristic of man, and from hints given above as to alcohol, tobacco and sexual excess, may we not measurably reconcile the difference in the proportion of male and female subjects attacked with tabetic disease?

It is said that in Japan where syphilis is known to be wide spread that tabetic disease is rarely to be seen; more, in our own country, our native southland, amongst the negroes where syphilis is so frequently encountered, we do not recall the fact in our experience of twelve years in the practice of our profession in that country of ever having seen a single case of tabetic disease in the negro. We are sure that it does occur, but those who give such assurance, re-assure us that the condition is rare. Dr. James

Jelks tells us that in the nineteen years of his professional life spent at the Hot Springs of Arkansas, he has never as yet seen one single case of tabetic disease occurring in the race above referred to. Now, if syphilis be the great factor in the production of tabes dorsalis, why in the races which we have referred to above where syphilis is known to be so common do we so seldom meet tabetic disease? These with other questions which would naturally arise from the preceding paragraphs are worthy of note and entitled to consideration. It has not been our desire to formulate a theory in the discussion of this subject, but rather to question some of the ideas that are so strongly held by those who believe in syphilis as the great underlying condition in the production of this disease. But at the present time we cannot resist the temptation to suggest that in our opinion we have one other cause which enters as a possible factor in producing locomotor ataxia, viz: the long continued and uninterrupted administration of large or even measurably large doses of iodide of potash which is so commonly given at the present day in the treatment of syphilis. When we recall the fact that the pathological changes found in every case of locomotor ataxia are those of arterio-sclerosis in the posterior spinal artery and its lesser branches, and understanding that any agent which is devitalizing, irritative and destructive in its nature and which is constantly circulating in the blood and destroying the red blood corpuscles, must necessarily produce irritation in the delicate walls of the blood vessels just the same as the poison from syphilis or gout, whatever that or their poison may be, and in consequence thereof we might naturally expect just such pathological changes as are found in locomotor ataxia. Again knowing that anemia means lessened resistance of all the vital functions of the body as well as a weakening of the walls of the blood vessels in consequence thereof, there would be dilatation and passive congestion, or more blood supply, a step necessary to be taken in the production of new connective tissue and the consequent thickening thereupon of the blood-vessel walls themselves would be the result. These two

factors in addition to the paralyzing influence upon the nerve centers of large doses of iodide of potash would, and does, in our opinion, produce just such changes as are found in locomotor ataxia. This would again go to show in connection with the above statement why the negro so rarely has tabetic disease, since it is well known that you cannot force him to take the drug after the active symptoms have disappeared. This will also hold good with women since many of them contract syphilis in such a way that they do not know what ails them and go through the whole course of the disease, taking medicine only when active symptoms manifest themselves.

In conclusion, we would say that iodide of potash has not one upon her list of friends who would guard and protect her every interest more than we, and the plea we enter in her behalf is the plea for longevity and happiness to mankind. Will we never, as scientific men, learn that a remedy which is so capable for good must when perverted be equally potent for evil?

THE PSYCHO-NEURAL FACTOR IN MEDICAL PRACTICE.*

By C. H. HUGHES, M. D., St. Louis.

THOUGH for more than two decades I have practiced only Neurology and Psychiatry, I have not ceased, as had been my habit for more than a decade preceding, to consider the whole field of clinical medicine in my special practice.

Howsoever a human being may be regarded in the estimation of the philosopher, the theologian or the poet, to the physician, man is a machine whose movements he considers as a whole and in all its wondrous parts whenever called upon to repair it. While the true specialist works at the repair of a part, he looks upon the whole and considers the relationship of the part to the whole and the whole to every part, as Descartes looked upon the soul as residing in the whole and the whole in every part of the organism. The sphere and function of a specialty is to manipulate and treat a part, an organ or allied group of organs or a physiological system of the animal economy, but it is the duty of the specialist to understand and consider the whole anatomical, physiological and chemico-biological machine when it is anywhere disordered because of this intimate relationship. He must with skilled physiologic and pathologic vision consider the whole mechanism while working on a part, and treat the entire patient so far as the patient's needs may require, while specially operating on an organ or group of organs, locality or system of the economy, so intimately blended and thoroughly inter-

* Read before the Miss. Val. Med. Ass. at St. Paul, Sept. 18th, 1896.

related is man in all his parts. Some parts, it is true, influence the whole less than others and in an insignificant degree, and the whole influencing some parts less than others and often insignificantly, nevertheless, in every local trouble no matter however small, the whole patient should receive consideration. The extraction of a tooth or the cutting of a gum may cause the haemophiliac to bleed to death by reason of the loosened hold the vaso constrictor vessels of his sympathetic nervous system may have upon the contractile power of his arterioles or by the additional reason of the diffluent quality of his blood, the result of defective metabolic function, itself greatly influenced by neural control. So too, the evacuation of an abscess or the lancing of a whitlow may cause the patient to faint dead away through psycho-neural impression, just as the sudden emptying of an extensive abdominal ascites by the sudden removal of accustomed pressure on adjacent organs may prostrate and collapse the patient. The good surgeon considers the man all over before he cuts him in a part, his susceptibilities, predispositions, powers of resistance, recuperative powers and natural courage in determining as to operation or prognosis, and much of the fate of a patient after an operation depends upon judicious after care and the inherent powers of the nervous system to assist in the repair and rebuilding of tissue, to resist and restore the effects of shock and to receive and conduct general recuperation. Whatever may be the matter with the patient his nervous system is always with, and either for or against, him and the surgeon in the battle of life after the surgeon shall have done his most skillful part in removing the local *casus belli* or the irritating sequence or the harrassing enemy to the peace or comfort or harmony of life, of the organism.

THE PSYCHO-NEURAL FACTOR IN THE PRACTICE OF SURGERY.

The fatal vivisections that have signalized the onward march of surgery, an art so beneficial to mankind in skillful, practiced hands, guided by conservative clinical

judgement, would have been far less in the past and would be less to-day with a broader knowledge and wiser consideration of the *vis medicatrix* of vital nerve centers, the recuperating or depressing play of the emotions of hope or dread, the influence of visceral ganglionic centers and the potency of vaso-motor nerve-fibers.

The neural counterfeits of uterine disease, as Goodell has termed those functional neuropathic conditions which call attention to the heart and which lead the narrowly experienced clinician but skillful cutter, to operate when only neural medication should have been employed, has cast a stigma upon some of the capital operations of Gynecology from which it is just now, after many years of fatal error, recovering.

Senn has lately struck a merited blow at some of these gyneco-surgical fatalities of judgement, and the scope of indications for oophorectomy will be hereafter more limited, in the best surgical minds, while normal ovariotomy has had its day and gone the way of cliterodectomy.

Painful ovaries are not necessarily to be cut out, but cured by neurological treatment and hysterectomy will be performed only for real organic and local pathological cause.

As a thorough knowledge of general and special pathology is essential to the soundest surgical judgement as to the propriety and necessity of an operative procedure, so is a knowledge of the nervous condition of the patient and the relation of his nervous system to the local disease found essential to proper diagnosis and prognosis. The time is coming and now is, when the surgeon should have wide neurological and psychiatric knowledge in order to avoid fatal mistakes and to most successfully practice his art. The manner in which the necessity of a grave operation is announced may to certain psychologically unstable constitutions predetermine a fatal issue or it may give to a doubtful issue a possibly favorable result. There are some constitutions so neuropathic and psychopathically predisposed that the shock of such an announcement would precipitate a crisis of mental alienation and it were better that the proposed operation should be abandoned than insisted upon under such

circumstances or that the patient should be gradually approached and prepared by cautious speech and suitable precursory reconstructive and tranquilizing neurological treatment. Some patients before being operated on should be made almost entirely over, in the tone of their nervous systems and some should be left alone, tranquilized and made comfortable and allowed to die in happy euthanasia. What, for instance, is the use of exsecting a far advanced cancerous uterus, after the cachexia has long persisted and the nerve centers have become irreparably neuratrophic and the neurasthenic has become profoundly incurable from the prolonged pain and insomnia, etc? The rational process would be to stop the pain and insomnia, correct as much as possible and make the patient's last days comfortable by neurological and antiseptic treatment and the best surgical suggestion, without the knife. In fatal surgical results the reputation of operative surgery suffers often because overlooked neuropathic conditions were at fault.

In my judgement the previously applied skill of a neurological clinician would postpone many operations indefinitely which are now fatally performed, and properly prepare other cases for the surgeon's knife and a successful surgical issue which are now doomed when the operation is decided upon, because conditions of proper endurance and resistance of the operation are not in the nerve centers of the patient.

The causes and effects of psychical shock in different patients are not always considered as they should be by either physician or surgeon. The possible evil effect of words and acts at the bedside or before an operation that tend to paralyze or even produce a paresis of hope, are not always duly considered. The surgeon who bluntly announces to his patient, after revealing the necessity for the knife and having all things ready—"Now I am going to operate. The proceeding may kill you but you would be better off dead than alive as you are; let us hope for the best," must have a strong-nerved, brave subject, to not be somewhat depressed by such an announcement, and such depression before the further depression of vital centers from chloroform or ether

even in the strongest nerved is not good clinical practice. It doeth not "good like a medicine." Such a procedure may have the virtue of candor to commend it, like the candid announcement by the physician that his "patient is likely to die; if he is saved it will be by the skin of his teeth." Recovery is not the rule when such premature prognoses are announced, sometimes because the patient could not have recovered by reason of an incurable malady and sometimes because of the vitally depressing effect of the speech that destroys hope and removes its buoyant influence from those vital nerve centers that influence the metabolisms of the organism and the assimilative processes of organic life and reformations of tissues. In our intercourse with patients, medical or surgical, the untoward and often fatal influence of depressing mental suggestion on the patient should always be avoided. Hope that "springs eternal in the human breast," if we do not interfere with it, is itself a buoyant medicine, and faith in the physician or surgeon is therapeutic power that should never be rudely shattered by us. Candor is to be commended but it can be too bluntly displayed and often is for the welfare of our patients. Besides the physician's or surgeon's judgement may be at fault—it often is. There may be more vital resistance and power of repair in the patient than the medical or surgical attendant thinks or knows. Vital power is not always a definitely measurable quantity, depending as it does upon ancestral factors in the upbuilding of the constitution—the cerebro-spinal axis and the sympathetic system of the patient—of which we are never fully cognizant. The patient should always have the benefit of this doubt in our prognostications before him or to him.

The little surgeon who pompously displays his tray of instruments before his trembling patient and to his woeful wondering mind descants upon the operation he is about to perform, and the chances of recovery, or displays a nonchalant unfeeling mien, acts unprofessionally and unwise!y and does not increase his patients chances of getting well quickly.

And the great surgeon who takes his patient into the operating room and places him while conscious on the table,

himself with instruments in hand, while white aproned attendants gather around the victim, approaching with sponge and bottle and instruments and appliances of the impending operative procedure is not so wise a surgeon, and does not so fully consider the effect of depressing psychical influences as he who chloroforms the intended subject of an operation in another room or in the same room without these depressingly suggestive influences.

Had I continued the active practice of surgery (of which I once had, as you know, ample clinical experience) I should never vaunt the implements of my art before my patient, at least before he should recover from the operation, nor anaesthetize him in the presence of any depressing influences. When practicable I would for purely elevating psychical effect begin the administering of the anaesthetic in the most cheerful room I could prepare, I would drape its walls with suggestions of hope and inspirations of courage. I would have nothing about me at that time suggestive of blood. I would cheer him so far as I might without falsity, mention similar cases, if I could, that had gone through his approaching ordeal successfully and let him take his operating couch and anaesthetic as "one who lies down to pleasant dreams." I would proceed thus because I am a psychologist and have added something more than operative skill to previously acquired surgical knowledge. I would be as tender with him about inflicting the mental pain of dreaded apprehension as,—"one who would not needlessly set foot upon a worm."

I would do this, not only because it would be the dictate of tender feeling, but because a sound psychology and a true psychiatry enjoin it.

P. S.—To be continued. This being all of the paper that was read. The next subject is "Hospital and Sick Room Psychiatry."

SELECTIONS.

NEUROTHERAPY.

STATIC ELECTRICITY IN SCIATICA.—Dr. S. H. Monell (*Brooklyn Med. Jour.*) has had results from the following procedure in sciatica. He places his patient fully dressed, sitting or standing, on the insulating platform of a Holtz machine, and applies the current in sparks over the painful points to the sacrum and generally along the affected nerve. In from five to ten minutes relief from pains results, lasting but a short time. Each subsequent treatment secures larger immunity from pain. He cites cases in which no other treatment was employed; but says that gout, rheumatism, syphilis etc., must be appropriately treated, if coexistent with the sciatica. One case of five months duration recovered after nine treatments in thirteen days, another after eleven treatments in sixteen days. One case after four years of suffering recovered at the end of forty-six days. None of these cases were put to bed or required to rest in any way and in none were splints used.

NITRO-GLYCERIN, according to Th. Schott (*Amer. Medico-Surg. Bul.*), develops its best action in the pure forms of angiospastic kind of angina pectoris. Next to these come the cases in which the heart-spasm is associated with lesions of the aorta. The remedy is much less reliable in stenocardia consequent upon myocarditis and in a fatty and weakened heart. In angina pectoris due to aortic anaeurism its action is insignificant and in the purely motor neuroses it usually fails to accomplish lasting good. In no case can success be predicted with certainty as its action is always individual, but it has the great advantage that it can be quickly ascertained whether indicated or not. In cases in

which the toxic effects, as nausea, vertigo, fainting spells etc., are produced by even small doses of the remedy, it should be discontinued. But if the toxic effects be not produced with small doses and the latter remain without action, the dose may be cautiously increased. The form in which the remedy is administered is not a matter of importance, In Schott's experience the liquid form is the best. He has seen tablets fail where subsequently the liquid proved successful, besides the liquid allows of more varied gradation in the dose.

He recommends the following formula as most advantageous.

Solut.	Nitroglycerin (1%)	0.2 gme (3 min)
Tinct.	Capsicum	2.5 gme (40 min)
Alcohol		12.5 gme (3½ fl.dr.)
Peppermint Water		12.5 gme (3¼ fl.dr.)

Dose 2 to 10 drops according to circumstances. In some cases of angina pectoris, nitroglycerin acts with astonishing rapidity. The spasmodic condition of the heart often begins to abate less than a minute after use of the remedy which usually develops its full activity within two or three minutes. One drop of this mixture may cause spasmodic conditions to disappear. In some cases however it helps until the patient gets accustomed to it, when the dose must be increased. Nitroglycerin may often be given in larger doses than it is usual to administer it, without serious consequences. Whereas 0.0005 or 0.001 gme(1-120 or 1-60 grn) is the maximum dose in which this remedy is usually given. Schott has seen patients take without inconvenience up to 10 drops several times daily of a mixture containing two and three times the nitroglycerin in the above formula. Heart disease underlying the trouble should of course be treated with other remedies since nitroglycerin is essentially symptomatic in action.

HICCOUGH persisting for three days in a non-hysterical girl was cured by spontaneous tongue traction. The affection appeared to depend upon disease of the stomach. It was noted that while the tongue was being examined

the hiccough ceased. The girl was then advised to protrude her tongue in a regular rhythmical manner. The cure was explained as due to reflex action upon the bulbar respiratory centre.—*K. C. Med. Rec.*

THYROID EXTRACT.—In Dr. S. Solis Cohen's clinic recently the tendency of *thyroid extract* to aggravate the symptoms of *exophthalmic goiter* in certain cases, was strikingly illustrated. A patient who had been improving under the use of *thymus extract*, but had come to a standstill, was tentatively placed upon the thyroid preparation. She returned in about two weeks with the goiter much enlarged, firmer in consistence and all the nervous symptoms exaggerated. Dr. Cohen remarked that his experience went to show that in exceptional cases thyroid preparations might benefit goitrous patients, both those with simple goiter and those with Graves's disease; but that as a rule the effect was *nil* or not good. He could give no definite rule for discrimination, although the effect of temperature upon the patient might be found to be of use; it being his present impression that those who were unduly susceptible to cold would do well, and those who were unduly susceptible to heat would do badly under treatment with thyroid preparations.—*Phil. Polyclinic.*

BROMIDIA AND PAPINE.—DR. I. H. GILES, of West Nashville, Tenn., speaks thus rapturously of Battle & Co's well known specialties: There is no opiate that serves the purpose as does Papine. Bromidia speaks for itself. Iodia is an alterative, unsurpassed in its merits. I prescribe these remedies, and specify Battle & Co., because they are so well prepared that I think no drug store or prescriptionist capable of combining their ingredients so nicely, so accurately, and all considered so reliably as they are coming from their laboratory.

MALARIAL HEMICRANIA.—That enterprising firm, The Antikamnia Company, is now combining antikamnia and quinia in tablet form, two and a half grains each, for malarial hemicrania, claiming happy results for the combination.

CONCERNING THE GOLD SOLUTION OF THE PAR-MELE COMPANY.—Many prominent medical practitioners report on the use of these gold solutions as follows:

First. That the best results are obtained by pushing these remedies to the point of toleration, and that *this may be done without fear of stomachic disturbance.*

Second. That the maximum dose varies widely in individual cases, some patients taking thirty drops three times daily before showing physiological affects, others being unable to reach even the average maximum dose (15 drops).

Third. That it is best to administer the solution in at least a wineglass of water, and to begin with a small dose (say 6 or 7 drops) and gradually increase.

Finally. That though the nature of these remedies and the class of cases in which they are indicated exclude the expectation of immediate results, their persistent use seldom fails to justify their administration, and the increase in number of red blood corpuscles to show the tonic effect upon the assimilative apparatus.

A HIGH REPUTATION SUSTAINED.—*The Medical Times and Hospital Gazette*, London, May 30th, 1896, speaks so favorably of its experience with the American analgesic, antipyretic and anodyne, a preparation the medical profession has become accustomed to regard as one of the certainties of medicine, that we reprint below its words of approval, knowing them to be in accord with the consensus of opinion as expressed by the medical men in this country. “Antikamnia—under the above name, a free translation of which is ‘opposed to pain’—now being introduced to the profession in the United Kingdom is an analgesic, antipyretic, and anodyne drug, which has already gained a high reputation in the United States. It is a coal-tar derivative, and belongs to the series which form the various amido compounds. It differs therapeutically, however, from most coal-tar products in producing a stimulating, instead of a depressing action on the nerve centers, especially those acting on the heart and circulatory system; hence it may be administered, even in large doses, without fear of producing collapse and

cyanosis, as occasionally occurs after the administration of antipyrin and other similar analgesic compounds. It has been very largely used in influenza, hay-fever and asthma, with good results; but its most markedly beneficial effects are experienced when administered in neuralgia, rheumatism, sciatica, headache and pain due to disorders of menstruation. As an antipyretic, it is recommended to be given in doses of from five to ten grains ever ten minutes, until the temperature has been reduced, or until forty or fifty grains have been taken, after which the remedy should be given at intervals of greater length. To relieve pain it is recommended to begin with a five grain dose; three minutes later the same dose to be repeated, and, if the pain continues, a third dose to be given a few minutes after the second. In our practice we have not found it necessary to give the remedy at such short intervals. In the treatment of neuralgia and headaches we have had satisfactory results from giving five-grain doses at intervals of ten to twenty minutes, until three or four doses have been taken. We may add that the drug is sold in tablets (three and five grain sizes) as well as in the powdered form. The former may be swallowed whole, or crushed and dissolved in glycerine and water, or in an alcoholic menstruum. The powder is conveniently given in cachets, or dissolved in a little wine or aromatic tincture, combined with glycerine or syrup. The drug is deserving of trial, and those among our readers who have not yet tested it should write for a sample."

THE THERAPY OF TABES.—From a recent contribution on this subject by Prof. Wilhelm Erb, of Heidelberg, we quote the following summary:

Usually you will require a therapeutic agent, for instance, some approved nervine; quinine, potassium iodide, the bromides, or particularly one of the many new analgesics—among which I rank acetanilid (0.30—0.50 to a dose) first, although phenacetin, antipyrin, exalgine, salipyrin, sodium salicylate, lactophenin, etc., are also valuable. It is often advisable to employ several of these new drugs together

(for instance, acetanilid with phenacetin, salipyrin with lactophenin, or similar combinations), and to add small quantities of narcotics (codeine, atropine or morphine). Large and quickly repeated doses of all these remedies may be recommended.—*American Therapist.*

HYSERICAL APHONIA.—Boulay (*Univ. Med. Jour.*) recommends introducing a sound into the larynx far enough to cause a slight spasm or cough and, removing the sound, have patient call out the letters of the alphabet slowly and calmly until a sound can be produced, then to count up to ten, then to articulate simple words and finally to converse. The sound may be introduced a second or third time, if necessary, in order to procure the desired effect. If this means fails, the aphonia is of a rebellious character and recourse must be had to external or internal electrization of the larynx by the galvanic or faradic current for four or five minutes, having the patient perform vocal exercise while the current is passed. Massage of the anterior portions of the neck, methodical traction of the tongue, rhinopharyngeal palpation or autolaryngoscopy are psychical measures that may succeed, as well as ovary compression. If these measures fail, hypnotic suggestion may be tried. General treatment with strychnine, valerian, the bromides, hydrotherapy or isolation must be associated with the local means employed, while lesions of the nose, pharynx or larynx must also be looked after.

NEURO-PATHOLOGY.

SPINAL CORD AFTER AMPUTATION.—Dr. Grigoriew (*Univ. Med. Mag.* Sept. 1896) investigated two cases of amputation of the arm, two of amputation of the thigh and one of amputation of the leg. The period elapsing between the operation and death varied from twenty years to one year. The results of his investigation with those of the greater number of authorities, he sums up as follows; in all cases excepting that which one year elapsed before death,

deviations from the normal appearance of the cord were noticed; in all cases, they were analogous, affected the corresponding portion of the cord and consisted in simple atrophy of certain portions of gray and white substance differing by degree of development. Simple atrophy of the nervous elements of the cord was greater as the period elapsing between amputation and death was greater, less as it was less. In the case in which the period was only one year, atrophy was completely wanting. With reference to the relative time before the separate paths and portions of the cord became degenerated, Dr. Grigoriew's results agree with those of other authors and those obtained by experiment on animals, viz.: that the atrophic phenomena appear earlier and are more marked in the sensory than in the motor areas of the cord.

EPILEPSY.—Dr. A. N. Langdon, in a paper read before the American Neurological Association, concludes that epilepsy, the choreas and probably most of the convulsive disorders are the dynamical expression of inhibitory insufficiency not indications of over-production of nerve energy nor "explosions" due to a molecular instability *per se*. That the cause of the inhibitory insufficiency is to be sought for in the end brushes of the collateral processes of various cortical neurons, the situation varying with the "type" of the disease whether sensory, psychic, or motor. That the defect consists most probably in structural incompleteness (small capacity, defective insulation, imperfect contact) or numerical deficiency, or both, in the collateral process of the neurons referred to. Defective collaterals may favor occurrence of convulsions in two ways, by impairing connection with other neurons (inhibitory storage, etc), and by increased resistance to overflow currents, causing temporary over-charging of motor axis cylinders. This is a new conception of the anatomico-dynamic basis of convulsive phenomena. On this basis, cases of epilepsy are classed under three groups, each of which represents important differences as regards prognosis and treatment: Primary or developmental type comprising the idiopathic cases under twenty years of

age. In these, the younger the subject and the better the heredity and environment, the better the prognosis under intelligent treatment; ultimate results depending on the possibility of promoting further and equable development of collateral communications with inhibitory mechanisms. The "accidental" forms are due to trauma, syphilis, lead toxins, etc. The prognosis here vary with the longer or shorter duration and the possibility of removal of the cause, being always favorable as long as permanent structural change in collateral and inhibitory mechanisms have not occurred. The degenerative pathological type, the rare cases of adult life and old age (not accidental), belong in this category. Here palliation only is to be expected as in degenerative changes elsewhere. In all forms the rational indications for treatment are: To decrease the incoming sensory excitation by diet, occupation, medicine and so lessen the intensity of motor responses which are not provided with suitable overflow and inhibitory mechanisms.

CAUSE OF CANCER.—Dr. O'Sullivan (*Australian Medical Journal*) says:

Whatever produces chronic ill-health depresses the nervous system, and is clinically found to constitute an influence strongly predisposing to cancerous developments generally.

Local agencies exert only a minor influence in their direct genesis.

While rapidly increasing in prevalence in civilized nations, they are almost absent among the savage.

Malignant disease is in very many instances primarily local and due to disordered functions, as proved by the fact known to all surgeons, that the disease when promptly removed may never recur.

Benign ulcerations may become malignant, when it may be assumed the phagocytic action of the leucocytes has become subjugated by the microorganism.

Disease of any kind, whether malignant or inflammatory, never occurs in an individual whose functions and nervous system are in perfect health, and who has, as a consequence,

perfect local and general resistance to all pathogenic microorganisms—in whom phagocytosis is healthy and perfectly accomplished. (And here I may be allowed to say that Mr. Jonathan Hutchinson insisted that cancer is simply a modification of what occurred in chronic inflammation).

When, from continued irritation, depressing influences, or advancing age, the physiological character and vitality of the animal cells become lowered, cancer finds all the conditions necessary for its growth.

In a word, cancerous disease is but one of the many proofs of overpressure on the nervous system, which the artificial and vicious conditions of modern civilization involve.—*American Lancet.*

THE BACILLUS OF PARESIS.—The *Journal of the American Medical Association* thus editorially discusses this subject: That paretic dementia, or, as it is more commonly designated, paresis, has in the vast majority of cases syphilis as its antecedent, is coming to be a generally accepted fact. The exact relation of the two disorders to each other are, however, still in question, and the syphilitic or para-syphilitic nature of paresis is maintained by some and as strongly disputed by others. If the infection of syphilis were as definitely known as is that of some other diseases, tuberculosis for example, the question would be more simple; we could search for the specific microbe, and if found the identity would be established. Other like questions have been settled in this way; the failure to find Hansen's bacillus in syringomyelia has been considered as conclusive against Zambaco's theory of its identity with leprosy, and still other instances could probably be cited. With the present uncertainty as to what is the real nature of the syphilitic infection, there is no possibility of a definite conclusion as to the identity of it and that of paresis on purely bacteriologic grounds, but a very recent Italian contribution is very significant and suggestive. In the latest issue of the *Amali di Nevrologia*, Dr. Piccinino, one of Professor Bianchi's assistants, reports the results of a bacteriologic study of paresis in the laboratory of the Istituto

Psichiatrico of the University of Naples. He examined the cortex in five cases, some of them with clearly syphilitic histories, others with it suspected or denied, using all anti-septic precautions and taking the specimens through openings made in the skull by trephining before the removal of the calvarium, as an additional security. Culture experiments and the usual staining methods gave only indeterminate or negative results; nothing very characteristic or noteworthy was discovered. The use, on the other hand, of a staining method only slightly modified from that of Lustgarten for his syphilis bacillus, revealed a great abundance in all the tissues, and especially in the pericellular spaces, of a form apparently not very different from that described by the above author. The same method was tested as a control experiment in other brains than those of paretics, but with a uniformly negative result, and it was only by this staining reaction that these bacilli could be detected in the paretic cortex.

This paper has a special importance, in view of the question of the parasyphilitic nature of paretic dementia, and reflexly, as it were, also on that of the value of Lustgarten's discovery. It is a little remarkable that the research had not been made before. Had there been more faith in Lustgarten's bacillus as the cause of syphilis, or had the notion that paresis is only a late manifestation of that disease been earlier accepted by physicians, the very obvious suggestion of this special investigation would undoubtedly have been sooner taken up. It will be in order now to repeat Piccinino's observations and to prove their value by widespread and careful investigations by our asylum pathologists.

CLINICAL NEUROLOGY.

TREMOR.—Dr. Lamacy (*Medical Week*) divides tremors into two classes according as they occur while the subject is at rest or in execution of voluntary movements; but polymorphous forms of the affection, frequently met with, do not

belong to either class. Tremor of the hands has been more thoroughly studied than any of the other forms. Pitres has shown that this tremor may exist independently of any of the diseases by which it is determined in a large number (40 per cent.) of healthy subjects. The proportion of tremor under normal conditions is the same in men as in women which shows it results neither from emotionalism nor alcoholism for in the former case the proportion of persons affected with tremor would necessarily be higher among women and in the latter case among men. In neurasthenia the proportion of subjects affected with tremor is 85 per cent., in epilepsy 20 per cent., in hysteria 34 per cent., in insanity 25 per cent. Tremor of the tongue in healthy subjects is rather rare (6.45 per cent.). In association with the tremor of the hands it is met with in 23.16 per cent. of all subjects examined. Quivering of the eyelids is not of value as a symptom as it is fully as frequent normally as in various neuroses. Tremor of the tongue is more frequent in paretic dementia than hand tremor at the onset. Tremor is rather frequently met with in association with arrhythmic movements of limbs. The same patient may present tremor in one limb and choreic or ataxoid movement in the other. Similar combinations are observed in certain cases of simple tic, paramyoclonus multiplex, post hemiplegic tremor and Fredreich's disease.

The diagnostic value of tremor varies because there are numerous transition forms between the various types described and because certain types are still but imperfectly known. In many affections tremor may be ephemeral without special significance, whereas at other times it is of great value when constant.

SYPHILY-NEUROSES AND EARLY TREATMENT:—Dr. J. Collins concludes, in a paper read before the American Neurological Association, that; Exudative and degenerative diseases due to syphilis are most liable to show themselves at the end of the third and beginning of the fourth, decade of life. Thorough and prolonged administration of antisyphilitic remedies during the activity of the virus does not seem materially to prolong this time limit. Active prolonged anti-syphilitic

treatment does not seem to prevent the development of locomotor ataxia or paretic dementia. This is true of degenerative disease though treatment may however have some effect in preventing exudative disease of the nervous system, such as spinal cord syphilis, diseases of the blood vessels, etc. Cases of tabes and paretic dementia in which syphilis is confessed and in which treatment has been most desultory and incomplete, are not more liable to the early development or to the severe manifestations of these diseases than those in which the treatment has been all it should be.

ANALGESIA AND LOCOMOTOR ATAXIA.—Dr. Sarbo points out (*Neurol. Centralblatt*) that in normal individuals, pressure of the ulnar nerve against the bone at the elbow produces pain and numbness in the distribution of the nerve and the result is similar when the peroneal nerve is pressed against the head of the fibula. In locomotor ataxia it has been claimed that this pressure upon these nerve trunks was no longer painful. There is considerable difference of opinion among German investigators as to the cause and significance of this analgesia. While in fifteen cases of locomotor ataxia, nine men and six women all of whom had suffered from the disease at least four years, all the men had analgesia of both ulnar nerve trunks with the exception of one in whom it was reduced on one side, and all had peroneal analgesia on one side or the other. Sarbo does not think the matter has been investigated sufficiently to assign to it a very definite position as a factor in diagnosis. In one woman there was analgesia of both ulnar and peroneal trunks, one had analgesia of both ulnar trunk and the right peroneal trunk and one had analgesia of the ulnar only. The remainder either presented slightly diminished sensibility or no change. Sarbo was prepared to expect more marked and constant changes in the peroneal than in the ulnar trunks since in locomotor ataxia more marked anatomical changes are seen in the lower than in the upper cord. Women gave closer attention while being examined than men.

HEPATALGIA.—Dr. Pariser in the last three years has observed several cases of liver neuralgia (*Med. Week*) which he states is not such a rare disease. Being unknown, it has been overlooked. It is usually confused with gall-stone colic; one case of hepatalgia was operated upon. In but few particulars is liver neuralgia to be distinguished from biliary colic. In hepatalgia the greatest pain is sharply localized to the liver whereas in gall-stones colic the pain is very frequently more intense in its radiation. The attacks are of varying duration from a few minutes to four hours and more. The cessation of the attack can sometimes in hepatalgia as in gall-stones colic, be ushered in by vomiting; occasionally icterus may occur. Hepatalgia is particularly characterized by the regularity of the repetition of the attacks, by its affecting especially female patients, above all, by its association with the menses. It belongs to the visceral neuroses and has an hysterical or neurasthenic basis. The therapy must be antineurasthenic, roborant and demands particular attention to, and if possible removal of, factors inducing attacks. Of nervines, cannabis indica is especially recommended.

DYSTROPHIA UNGUIUM ET PILORUM HEREDITARIA.—Charles J. White, of Boston (*Journal of Cutaneous and Genito-Urinary Diseases*, June, 1896, p. 220), refers to a peculiar and unusual hereditary affection which attacks coincidentally the hair and nails. The condition was observed (according to obtainable facts) in four generations, and White speaks of a similar instance as having been observed by MM. Nicolle and Halipre through six generations, in all of which thirty-six persons had been affected. The hair and the scalp present a downy condition, never very prolific or lengthy, and is hardly perceptible except to a close observer. The nails show a characteristic onychia. After repeated microscopic examinations of both hair and nails the author was unable to detect a cause.—Dr Cantrell's selection in *Phil. Polyclin.*

BROMIDE IN THE BRAIN POST MORTEM.—The *Practitioner* gives an account, which we condense, of a boy, æt. 12, under hospital treatment for a year for a series of epi-

leptic attacks complicated with acute mania. He was taking during the whole of this time from 60 to 130 grains a day of potassium bromide. In November, 1888, he caught scarlet fever. The fever was not severe, and ran a normal course but the attacks of epilepsy and mania continued to occur, and in the intervals between those there was profound depression and disinclination to speak or eat. At first the potassium bromide was given up as unsuitable, and indeed perhaps dangerous; but when the convulsions recurred again and again, it was resumed in doses of 60 grains a day. After some days a cough began, which was sometimes very choking; there was no auscultatory sign of pneumonia, but the temperature rose, and he died eighteen day after the onset of scarlet fever. A post-mortem examination showed some patchy congestion of the lungs, with a little pus in the bronchi, and no pathological change in the kidneys or elsewhere, except perhaps that the brain substance was a little tougher than usual. The torpor between the convulsive attacks had been very striking clinically, and his doctors were interested in attempting to trace a connection with the bromide treatment and a possible accumulation of the drug. M. Cazeneuve analyzed the brain, and M. Doyon the liver for comparison. In the brain there was found 30 grains of bromide; in the liver 12 grains.

SEARCH-LIGHT FORECASTS OF THE COMING PAN AMERICAN MEDICAL CONGRESS.—SYMPTOMS OF SPEECH DISTURBANCES AS AIDS IN CEREBRAL LOCALIZATION.—The paper by J. T. Eskridge, M. D., of Denver, Colo., before the neurological section will seek to establish the following propositions on the above subject:

1. Anorthographia (inability to write from loss of the power to spell). The centre in which is stored the memory pictures of the arrangement of letters in words, etc., is probably situated in the foot of the left second frontal convolution in right handed persons.

Cases of so-called pure motor agraphia apart from the involvement of the muscles concerned in writing probably do not occur.

2. Oro-lingual paralysis occurs from a lesion in the extreme lower portions in the central convolutions (ascending frontal and parietal). This centre is bilateral and the paralysis is never complete from a unilateral lesion.

3. Broca's Aphasia is caused by a lesion in the foot of the left third frontal convolution in right handed persons.

4. Auditory disturbances of speech are caused by a lesion in the posterior portions of the first and second temporal convolutions.

5. Visual disturbances of speech result from a lesion in or near the angular gyrus.

6. The various forms of apraxia have little localizing value further than to point to a lesion in the left side of the brain in right handed persons, at a point posterior to the Rolandic region.

7. By a careful analysis of the symptoms in sensory aphasias the cortical or subcortical lesions which have given rise to them may often be accurately localized, although the supposititious cortical centres of speech are not directly involved.

PSYCHIATRY.

HYSERICAL AFFECTIONS OF THE MASTOID.—Dr. J. E. Sheppard of Brooklyn reported to the American Laryngological, Rhinological and Otological Society the case of an 18-years-old girl in rather poor health who came to him with the history of deafness for three years and of pain and tenderness around the right ear for the past three weeks. Bone conduction was better than aerial conduction. Firm pressure could be made over the part without causing pain. The patient was given sodium bromide and in a few days was well. The second case was that of a young woman twenty-one years of age who had fallen down an elevator shaft. Recently she had felt dizzy and had exhibited a tendency to fall backward to the right side. She complained of pain around the ear. The mastoid region appeared to be tender but not at all oedematous or swollen. A proposi-

tion to operate did not lessen her symptoms at all and for several days he had been in doubt as to the correct diagnosis. Two seances or partial hypnosis produced a cure. The third case was a woman twenty-three years of age who stated that for the past five months following a cold she had suffered from pain in and around the ear without any discharge. Examination showed no evident cause for the condition and the diagnosis was made of hysteria and the attending physician was advised to treat the case by "suggestion". He had been unable to learn the outcome of this case.

Dr. Richardson said that not long ago he had operated upon a case of this kind. The patient was a young woman about eighteen years of age who had been treated six years ago for suppuration of the right ear. When seen again the ear was once more suppurating and there was extreme tenderness over the mastoid region. She had become hysterical as the result of grief over the death of her mother. There was no oedema or redness over the mastoid but it was well known that there were cases of serious mastoiditis without the usual signs. After waiting about two weeks he had opened the mastoid cells only to find them perfectly normal. The patient was, however, completely cured.

Dr. Myles referred to the case of a woman in comfortable circumstances who had suddenly developed extreme tenderness in the mastoid region. The girl was hysterical and he had some reasons to expect that she purposely irritated the ear. The girl was greatly pleased with a proposal to open the mastoid but after consultation this was postponed and the patient recovered without further treatment.

Dr. Phillips recalled a case of recurrent furunculosis of the canal and finally of severe pain and tenderness in the mastoid. One day she forgot to remove the article that she has been introducing surreptitiously into the ear. Examination revealed a fragment of a pin and several pieces of fingernails in the canal.

Dr. J. E. Nicholas said that in one case which he had seen, the mastoid cells were healthy but the patient had been cured at once by opening them. In another case in which there was an excoriation of the interior wall of the

canal and in which he suspected that hemorrhages complained of had been produced by picking this spot with a pin, hypnotic suggestion was only temporarily beneficial but a proposal to operate was sufficient to effect a cure. It was not at all improbable that there might be some elevation of temperature in these cases thus still further obscuring the diagnosis but ordinarily this elevation would be light.

Dr. Denchsa remarked that in this discussion nothing had been said about the result of comparing the two sides. In these hysterical cases in which pain was complained of on one side there was usually as much tenderness on the other side. He recalled a case in which at each menstrual epoch there would be marked oedema and tenderness over the mastoid. Such a condition must be looked upon as angio-neurotic in character.

ANALGESIA OF THE ULNAR NERVE IN CASES OF INSANITY.—Dr. O. Snell has corroborated the statement made by Cramer, that the "funny bone" sensation, *i. e.*, the unpleasant feeling produced by pressure on the ulnar nerve in the sulcus ulnaris, is much more frequently absent in general paralytics than in other cases of insanity. He found the phenomenon absent in 14 out of 25 general paralytics, or in 56 per cent., while it was not found present in but 11 out of 75 cases of other forms of insanity. It was impossible to demonstrate a connection between the sensory disturbances of the surface of the skin innervated by the ulnar nerve and the other symptoms of general paralysis.—*Berliner klin, Wochenschr.*—*Centralbl. f. innere Med.*, March 7, 1895, Dr. Hoisholt's selection in *Occ. Med. Times*.

HE IS 139 YEARS OLD.—Russia has the oldest man on earth, says *The St. Petersburg Gazette*. Its Moscow correspondent tells of him thus:

"There appeared this week in the office of the police surgeon an aged man who wished to have his injured hand bandaged. The surgeon bound up the wound and then began talking with the patient. He learned eventually, from documentary evidence, that the man was born in 1757, during the reign of the Empress Elizabeth, and therefore is

139 years old. The old man whose name is Kusmin, said he was a native of Moscow, and from his twentieth to his eighty-sixth year had been a coachman. In his eighty-sixth year, however, he had upset his master, a count, and the count's brother, had hurt both seriously and had been sent to Siberia, where he had lived until 1893. In that year he decided to return home, and he arrived in Moscow in 1894. He at once started for Kieff on a pilgrimage, from which he had just come back. He was much grieved to find that all the friends of his former years were dead.

"Kusmin's eye sight is undimmed, his hearing is good, and he is a splendid walker, as his pilgrimages have shown. Up to his 134th year he had never tasted whisky, but now he allows himself an occasional drink."

FORENSIC PSYCHIATRY.

SPECULATIVE OPINION EVIDENCE.—The opinion of a medical witness as to the mental condition of a person at a certain time, based upon a physical examination made eighteen months afterward, where such witness is not informed as to the mental condition at the time when the mental capacity was in question, the supreme court of Kansas holds, in *Missouri Pacific Railway Company v. Lovelace*, decided July 11, 1896, is largely conjectural, and is too uncertain and speculative to be valuable or admissible. Opinion evidence, the court says, is only admitted from necessity, and then only when it is likely to be of some value.—*Journal American Medical Association*.

MISSOURI RULE AS TO BURDEN OF PROOF OF INSANITY.—The supreme court of Missouri holds, in the case of *State v. Wright*, decided June 2, 1896, that the burden is on a defendant who interposes a plea of insanity to sustain that defense to the reasonable satisfaction of the jury. It says that it is in the nature of a plea of confession and avoidance. It confesses the homicide, but denies the crime of it. The court also holds that a medical expert was very

properly permitted to give his opinion respecting the sanity or insanity of the defendant, having for a basis the hypothetical case, together with what he had learned from an examination of the defendant.—*Medical Review.*

INSANE DELUSIONS.—It may be said that both the English and the American courts, by a long line of decisions, have established the rule of law to be that, the presence or absence of delusion in the mind of the subject was the true criterion of the presence or absence of insanity in any case: *Dew v. Clark.*, 3 Add. Ecc., 79; *Wheeler v. Anderson*, 3 Hagg Ecc., 574; *McElroy's Case*, 6 W. & S., 451; *Am. Seaman's Fund. Soc. v. Hopper*, 33 N. Y., 619; *Duffield v. Morris*, 2 Harr., 375; *Sutton v. Sadler*, 5 Harr., 459; *Frere v. Peacock*, 1 Rob. Rcc., 442; *Stanton v. Wetherwax*, 16 Barb., 259; *Mullin v. Cottrell*, 41 Miss., 291; *Buswell on Insanity*, § 14; *Forman's Will* 54 Bar., 274.

The courts have made exceptions to this general rule, where "delusion" is not the criterion: 1. Insanity congenital "*ex nativitate.*" 2. Cases where the mind has become enfeebled, weakened, or disorganized, due to disease, or to the gradual development of senile dementia. The law now recognizes insanity as existing in certain cases without delusions: *Nichols v. Binns*, 1 Sw. & Tr., 239; *Am. Seam. Fund v. Hopper*, 33 N. Y., 619; *Regina v. Shaw*, L. R. 1. C. C., 145; *Buswell on Insanity*, § 16. (lb., p. 728.)—Clark Bell, Esq., *Medico-Legal Journal*.

MONOMANIA.—THE TERM SHOULD NOT BE EMPLOYED.—The use of the term *monomania* is misleading and improper. That term among judges, lawyers and lexicographers has been understood to mean derangement concerning a single faculty of the mind, or with regard to a particular subject only, as defined by Webster. This has had judicial construction in the courts. Legally, *monomania* has been held to exist where the mind is deranged upon one subject, the insanity relating to one delusion, and retaining the other intellectual powers. It excuses only when this delusion leads to an insane impulse, which controls the will and judgment, obliterates the understanding of right and wrong,

and results in the commission of an act which the accused was unable to resist, or to refrain from, and yielded to its domination: *Stevens v. State*, 31 Ind., 485; *State v. Johnson*, 40 Conn., 136; *Com. v. Rogers*, 47 Mass. (7 Metc.), 500; s. c. 1 Lead C. C., 94; *Brailly v. State*, 31 Ind., 492; *Com. v. Haskell*, 2 Brewster (Pa.), 401; *Com. v. Frith*, 5 Clark (Pa. L. J.), 455; *Life Ins. Co. v. Teny.*, 21 U. S. (15 Wall.), 580; on 21 L. Ed., 326; *United States v. Hewson*, 7 Bost L. R., 361; *Span. v. States*, 47 Ga., 553; *Roberts v. State*, 3 Ga., 310; *Hopps v. People*, 31 Me., 385; *State v. Felter*, 25 Iowa, 67; *Wesley v. State*, 37 Miss., 327; *Scott v. Commonwealth*, 4 Met. (Ky.), 227; and as to responsibility: *Com. v. Mosier*, 4 Pa. St., 264; *State v. Huling*, 21 Mo., 464; *Royce v. Smith*, 9 Gratt. (Va.), 704; *Rex. v. Offord*, 5 Carr. & P., 168; *Willis v. People*, 5 Park, Crim. R. (N. Y.), 621; *Reg. v. Burton*, 3 Fost. & F., 772; *Rex. v. Townley*, 3 Fost. & F., 839.

Among medical men and authors the term *monomania* means quite another thing, as was intended by Esquirol, its author, and so understood by all modern American, French, German and Italian scientists and writers. Its use is, therefore, misleading, and it is now generally abandoned by the better medical authorities for that reason: Vid. Article *Monomonaia*, 2 Bell's Medico-Legal Studies, p. 101. Maudsley, Pliny Earl, and many writers and observers deny the existence of an insanity limited to one subject, leaving the brain normal and healthy on all other subjects. For these reasons the term monomania should not be longer employed by medico-legal writers or in text-books. (lb., 729.)

NOTE.—Although courts have held that insanity may exist where there is only one specific delusion, and the manifestations are limited to that one subject, with the mind clear and unimpaired on all other subjects, based upon the opinions of medical men and popular belief, alienists of the highest attainments and largest experience deny such a condition, and they are undoubtedly correct. If the brain is diseased to such an extent as to produce a state of insanity in any respect, it is difficult to conclude that the subject is sane in all other respects. (lb., 734.) CLARK BELL, *Medico-Legal Journal*.

CLINICAL PSYCHIATRY.

THE UVULA OF THE INSANE.—By examination of 108 insane patients, I discovered that in no less than fifty-three, or almost 50 per cent., deformities of the uvula were present. The commonest peculiarity was a twist to one side, about equally to the right or to the left, but a little oftener to the left side. The total number of patients with a twisted uvula was thirty-two, or not quite 31 per cent. The proportion was much greater in the degenerative forms of insanity, the number being nineteen among thirty-five cases, or over half, as against thirteen in sixty-nine cases of acquired insanity. Thus, just in proportion as the physical stigmata of degeneracy were more marked, the proportion of deformed uvula increased. Hypertrophy and elongation of the uvula were not abnormally frequent, and they were not commoner in the degenerative than in the non-degenerative types. Bifid-uvula was not found in any case. So far as sex is concerned, the proportion of twisted uvula in men was 32 per cent., and in women 29 per cent. I opine, from the results of this inquiry, the existence of a uvula twisted to one side and not innervated forms an anatomical and physiological stigma of degeneration. The twist or bend implies an unequal development of nerve-supply of the two sides, and the degenerate uvula is, as might be inferred, one that has an unequal and defective nerve-supply. In more than half of all degenerates the azygos uvulæ does not act.—Doctor C. L. Dana in *Jour. Ner. and Mental Dis.*.

NEURO-PHYSIOLOGY.

SECRETORY EXCITABILITY OF ALIMENTARY CANAL.—Dolinsky made a series of experiments on dogs carrying pancreas and stomach fistulas, which show that secretions of the pancreas are stimulated when the lining of the duodenum comes in contact with acids—diluted vinegar acid, mineral acids, lactic acid, or sour drinks; this circumstance also affects noticeably the secretion of the gastric juice. Alkaline liquids do not produce the same effect; nor do

neutral liquid foods when introduced without the knowledge of the animal. Special experiments with dogs which had, besides the two fistulas, an opening into the œsophagus, showed that the psychical effect of giving food, even when the animal was deceived with pretended food, was to excite the secretion of gastric juice, the hydrochloric acid of which stimulated in turn the secretion of the pancreas. Dolinsky considers these facts important in a teleologic sense, as the alkaline secretion of the pancreas neutralizes the acidity of the gastric juice. Fats also excite a reflex pancreatic secretion, and alcohol in a slighter degree.—*Centralblatt fur Chirurgie.*

NEUROLOGY.

GLIOSIS IN EPILEPSY.—Dr. E. Blenler found, in the brains of 26 epileptics, a constant hypertrophy of the glia-fibers located between the pia and the most external, tangential nerve-fibers. The brains examined were of cases of marked epileptic dementia. Dr. Blenler afterward examined 54 brains of non-epileptic (51 insane and 3 mentally sound cases). In these cases no such gliosis was present. The picture was so characteristic that in all cases the sections of epileptic brains were recognized as such without the knowledge of the clinical diagnosis. In most of the cases of epilepsy the foramen magnum was found remarkably narrow. Whether the anatomical changes of the glia are consecutive to or accompanying the clinical picture of epilepsy, or perhaps the cause of it, cannot be determined. The writer, however, considers it probable that the gliosis sets in at least simultaneously with the beginning of the attacks, as the anatomical changes were not found greater after a longer than after a shorter duration of the disease.—*Munichener med. Wochenschr.*—Dr. Hoisholt's selection in *Occidental Medical Times.*

EDITORIAL.

[All Unsigned Editorials are written by the Editor.]

Smiling and Laughter in Epileptoid and Epileptic Disease.—The *Popular Science Monthly* contains the following reference to a case of this kind under the caption of "Laughter as a Symptom of Disease."

The patient, whose case was described before the Psychiatric and Neurological Society of Vienna, was 30 years of age and had been subject for three years to fits of laughter, which occurred at first every two or three months, gradually increasing in frequency to a dozen or more a day. The attacks occurred especially between 9 P. M. and 6:30 A. M. Some occurred also during the day, however the patient happened to be occupied. In the intervals between the attacks, and immediately before and afterward, the man appeared perfectly well. The attacks commenced with a tickling sensation arising from the toes of the left foot, and the patient would fall to the ground unless he could reach some place to lie down. When this feeling reached the level of the left nipple the patient lost consciousness for a few seconds. Often the patient lay upon his face. The mouth and eyes were closed spasmodically, the eyeballs turned upward; the pupils were dilated and unresponsive to light. At the height of the attack the patient at first smiled, and then laughed aloud without other sign of merriment. The entire attack occupied about two minutes. On two occasions there was protracted loss of consciousness.

Laughter followed by a chattering noise has, in our experience, once habitually preceded the more violent cry of a processive epilepsy ending in general convulsions and unconsciousness. And in a child now under our treatment a smile always precedes the daily recurring epileptoid seizures, which appear several times each day, as the child passes into temporary unconsciousness. This symptom is only a part of the symptom complex of epilepsy and epileptoid disease, akin to the precursory grimaces and sardonic laugh described by observers.

Hack Tuke Memorial.—The great respect in which the late Dr. D. Hack Tuke was held both in England and America has led to a generally expressed desire that his memory should be perpetuated in connection with the great work to which he devoted his life, viz.: the amelioration of the condition of the insane and the advancement of neurological and psychological medicine.

With a view of carrying out this object, a Committee has been appointed to solicit subscriptions in the United States and Canada.

The fund obtained will probably be used to found a library in connection with the British Medico-Psychological Association to which Dr. Tuke's personal library has already been given.

The Committee ventures to make an earnest appeal for subscriptions to carry out this worthy object.

Subscriptions may be sent to Dr. Chas. W. Pilgrim, Poughkeepsie, N. Y.; Dr. Chas. G. Hill, 317 North Charles St., Baltimore, Md., or Dr. Frank C. Hoyt, Clarinda, Iowa.

Doctors Should Visit St. Louis.—The many Northwestern, Western and Southern physicians who come to the city in September and October to consult or place patients in the hands of specialists and all doctors going to the different medical conventions held at this season of the year, should make it a point to include a stoppage at St. Louis en route, to see the electrical and other interesting exhibits at the great St. Louis Exposition, thus combining diversion and pleasure with scientific acquisition.

The steady progress of St. Louis during these times of financial depression is the wonder of all people who visit her, as her financial stability and business prosperity is the admiration of the financial and business world. Her medical educational institutions with her splendid modern buildings and equipments and complete faculties are the equal of any in the United States, while her great Exposition is confessedly without a rival in any city of the American Union.

American Pharmacists.—It is gratifying to the medical profession to note the progress of so many pharmaceutical firms and to see them putting forth efforts to win further appreciation from the profession of their meritorious products and formulae and to see them giving the profession good goods while promoting their business interests. This is the true secret of success on the part of such firms as cater to professional countenance. The rivalry

among American wholesale pharmacists to make their respective specialties better than all others and to give intrinsic value to trade marks in medical manufacture is what has given American Pharmacy its world-wide and preeminent renown. We are glad to see it.

The "Indian Lancet" on the Hemp Habit.—An editorial writer in the *Indian Lancet* makes the following comment on the use of hemp:

The charms of Indian hemp are unknown in England. The people there are still too robust a race, and prefer to drown their care in good old ale or its kindred. Yet if they only once experienced the delights of Hashish, which are to those of tobacco as Chartreuse is to gin, they would think more highly of the wisdom of life of the Orientals. In the East enormous quantities of the plant are consumed. In fact, although so little is heard about it, it runs neck and neck with opium. But in England it is never used except as a drug, and even doctors there have not yet become familiar with its use.

It is not a little interesting to read in the next paragraph the account of "the most extraordinarily pleasant effects" of this drug, which only the physicians of India thoroughly know. It is the well-known description of Dr. H. C. Wood of his own use of the drug. It is said that De Quincey found the greater part of his experience as an opium eater in his own imagination. Certainly an ecstatic intoxication from an American work on therapeutics has the advantage of no unpleasant after-effects and the *Lancet* might recommend Dr. Wood's account to its inexperienced British readers as a safe and cautious beginning.

When about to clip from our esteemed Indian contemporary the above interesting excerpt, it fell under our eye in the pages of another esteemed home contemporary with editorial comments which are of sufficient interest to accompany the item with our commendation.

Dr. John H. Callender, the eminent alienist and neurologist of Nashville, died on the 3d of August.

Name of South Carolina Asylum Changed.—The South Carolina institution formerly known as the "State Lunatic Asylum" has had its name changed by law to the more euphonious one of "State Hospital for the Insane." A very proper change of name.

The American Electro-Therapeutic Association has done much for the progress and recognition of Electro-Therapeutics in the profession.

The annual meeting held in Boston, September 29th, 30th and October 1st., gave promise of a greater success than any former one, in both the scientific and social aspect. If you are concerned in the work of Electro-Therapeutics it will be to your interest and pleasure to be connected with this Association.

Sero-Therapy in Tuberculosis.—Dr. Paul Paquin of this city has given "The Experience of Several Physicians with Sero-Therapy in Tuberculosis, and a report of Cases," in a paper read by him May 7th, before the American Medical Association, at Atlanta, Ga. This contribution appeared in the *Journal of the American Medical Association* August 15th, 1896.

Paquin has thoroughly tested this antitoxine for a long period of time, and demonstrated its efficacy, and the results obtained by him are of such interest as to demand further professional consideration, and we take pleasure in calling attention to the article. Sero-Therapy in Tuberculosis is entitled to a place in therapeutics, and such experiences as Paquin's tend to awaken interest and confirm confidence.

Etiology of Hysteria.—An article with this title by Sigm. Freud has just been concluded in the *Wien. Klin. Rundsch.*, Nos. 22 to 26. He makes the grave assertion that hysteria, hysterical parasthesia or paraplegia, hysterical sensations, etc., and probably also paranoia, "compulsive ideas" and various psychoses, are all traceable to one cause, viz., conscious or unconscious memories of sexual occurrences in early childhood, and that the character of the neurosis is directly determined by the character of the sexual actions. The hysteria commences with an effort of the will to throw off some haunting idea; this idea is connected either logically or by association with some unconscious memory; this unconscious memory is invariably of one or more sexual occurrences dating perhaps from the earliest childhood. The hysteria usually develops after puberty, but in the severest cases it commences with unfailing regularity at the eighth year. The sexual events that preceded it date therefore, from a still earlier age, in some cases from the fourth, third or even the second year. In the eighth year, the period following the second dentition, the sexual system probably passes into another stage of development, as the same sexual events commencing or continuing after this period, have none of this pathogenic effect. Freud believes that the original instigation always proceeds from an adult. His statements are based on extensive clinical ex-

perience, and scrupulously careful investigations. He expects to meet with opposition and incredulity, until the pathogenic power of unconscious memories is more fully recognized than at present.

We extract this from the journal of the A. M. A. only to condemn the absurdity of such wildly conjectural, unproved and unprovable conclusions. Hysteria is a constitutional psycho-neuropathy with morbid impulsions, caprices, delusions, hallucinations, and illusions, psychic and sensory. We see it displayed in the asexualized after oophorectomy, in emasculated males, and in the sexually dormant, in men with psychical impotency and in women after the menopause. Besides the psychical perversions of hysteria, like its neurotic displays, are not always, as they certainly are not all, erotic or sexual.

The unconscious memories are conceded as pathogenic displays but not necessarily as pathogenic power, as claimed by this author. Hysteric displays appear in strongly predisposed to this neuropathic heritage at an extremely early age, even before the development of the genic sense and contraindicates the author's theory. The author is loose in his logic and faulty in his observations and conclusions.

Hysteria, whatever its exciting causes, whether in the premature or over sexual, grief, disappointment or other psycho-neural sources of depression and exhausting excitation, is usually bad neuropathic endowment, dormant at birth but ready—prepared like the lucifer match—for flame when rightly struck. Herr Sigmond Freud should try again.

The Medical Standard.—DR. JAMES G. KIERNAN, of Chicago, we regret to learn, has severed his connection with the *Standard* after an editorial service of nearly ten years. This is a great loss to the corps editorial. Kiernan is a fertile, fluent and preeminently well informed medical writer. The facts and force of his able pen will be sadly missed if he does not elsewhere resume his connection with medical journalism. Dr. Kiernan is also one of the ablest of our collaborators.

Fairchild's Pepsine Imitated.—In this connection we note that one of our most reliable wholesale manufacturing firms has been compelled to resort to the law to protect itself from the unfraternal crime of certain retail pharmacists who have been counterfeiting Fairchild's essence of Pepsine, an incomparable preparation which has justly earned the approbation and preference of all American physicians.

The profession owes Fairchild Brothers and Foster a

debt of everlasting gratitude for introducing to the American medical profession the best and most moderate priced scale pepsine and essence of pepsine extant. They are justly entitled to the high award of merit which they have now in universal professional approval and prescription. We hope this reliable firm that has been such a benefactor to the successful therapeutics of American clinicians, will run down and legally punish all who would ungratefully filch from them their good name. As for ourselves, we will discriminate in our patronage against any dispensing pharmacist who will substitute any other essence of pepsine for Fairchild's on our prescriptions.

Twelfth International Medical Congress, Moscow, 7 (19)—14 (26) August 1897. Section of Nervous and Mental Diseases. Committee of organization: Directors; Prof. A. Kojewnikow, Prof. S. Korsakow, Prof. W. Roth (Moscow). Members: Prof. J. Anfimow (Kharkow), Prof. W. Bechterew (St.-Petersburg), Prof. L. Darkschewitsch (Kasan), Prof. P. Kowalewski (Warsaw), Academ. J. Mierzejewski (St.-Petersburg), Prof. J. Orschanski (Kharkow), Prof. N. Popow (Kasan), Prof. M. Popow (Tomsk), Prof. Runeberg (Helsingfors), Prof. Sölan (Helsingfors), Prof. J. Sikorski (Kiew), Prof. W. Tschisch (Juriew), Prof. A. Stcherbak (Warsaw). Secretaries: Priv.-Doc. L. Miur (Moscow), Priv.-Doc. W. Serbski (Moscow).

Dear Sir:—The Organization Committee of the Section of Nervous and Mental Diseases of the Twelfth International Medical Congress has the honour of inviting you to take a part in the works of the Section. According to § 17 of the XIIth International Medical Congress Statute these works shall consist in the reading and discussing of papers, treating the programme questions, which we have fixed upon previously and in presenting articles on themes, which shall be chosen by the reporters at their own desire. The themes (six in number), which we have decided to inscribe on the programme, are as follows: Neuropathology: 1, Pathology of the Nerve Cell (Finest Structure and its Pathological Changes). 2, Pathological Anatomy and Pathogenesis of Syringomyelia. 3, Pathogenesis and Treatment of Tabes dorsalis. Psychiatry: 1, Obsessions and fixed-ideas. 2, Pathogenesis of General Paralysis of the Insane and Delimitation of this Disease from its Cognate Forms. 3, Hypnotism and Suggestion in their reference to Mental Diseases and Medical Jurisprudence. The question of the Surgical Treatment of the Brain and Spinal Cord Diseases will moreover be discussed by our Section in her united

sitting with the Surgical Section. The Committee has undertaken the charge of securing one or two introductory articles on each programme question. We should be very glad, most respected Colleague, if you would inform the Congress of the results of your investigations and observations, which have reference to the programme questions, or if you would present an article on some other question of the domain of Neuropathology or Psychiatry. We beg you to inform us of the title of your presumed paper, as soon as possible, because according to § 16 of the Twelfth International Medical Congress Statute, all the propositions which have reference to the activity of the Twelfth Congress are to be communicated to its Organization Committee not later than the 13th January 1897. Awaiting a favourable answer and expecting the pleasure of seeing you in Moscow, we remain yours faithfully, A. Kojewnikoff, S. Kor-sakoff, W. Roth, Directors of the Section. Moscow, 15 July 1896. Address: Russia, Moscow, Clinic of the Nervous Diseases.

Let Us Take Care of our Own.—The *Texas Medical News*, referring to two physicians of that State, candidates for election to the state legislature, and advising "the profession throughout the state should see to it that every physician who is a candidate for the next legislature is elected this fall", strikes the key note of the profession's welfare before the people. When a reputable physician will make the sacrifice, he should be sustained, for it is in the legislature, state and national, that the interests of all classes are best promoted. It is to the lack of medical men in the councils of state and nation that is due the comparative neglect of medical interests and the unjust degradation, compared with others less worthy of public esteem, of medical men.

Medical men are the peers of all others in public benefactions and no men in the world's affairs are superior in all around culture to the properly educated physician. He knows more of human nature and its needs than the theologian or philosopher, more of science than the lawyer, and often as much of literature as the average Literateur. Yet his calling compels self sacrifice and withdrawal from those places where men most do congregate and his influence is not felt as that of others is, because duty keeps him at a distant post of service. Monuments of bronze and marble are erected to statesmen, historians, poets, warriors, jurists, actors and philanthropists and when immortal remembrance is secured to all of these, then lastly the doctors are remembered by a

grateful people. It would not be so if physicians held place in legislative hall with lawyers, statesmen and politicians. The real benefactor would be the first to be commemorated. The names of Harvey and Jenner and Graves, McDowell, Hunter, Hall and Beaumont would then be first enrolled and high as the highest "on fame's triumphal arch." And where is Benjamin Rush, America's first physician and statesman as well? No marble statue of this great physician and patriot reminds the people who may visit the nation's capital of the compatriot of Jefferson and Washington and Patrick Henry. Why? Because there have not been medical men in the nation's councils to take care that posthumous justice is done to our worthy medical names in American history; and McDowell and Morton, why have they no busts under the capitol's dome? no niche in America's temple of patriotism? For the same reason; for they were peers of any of the world's benefactors and names whose memories are so cherished by the world now that they need no ornaments to recall their virtues. But there was a time when a grateful nation should have remembered them in marble and they would have been so remembered at the capital had there been physicians as there have ever been other citizens in the councils of the capital.

The moral of this article is that medical men of means and leisure, retired physicians, owe it to their profession to go into politics and contend for political place and power with their fellow citizens.

With medical men in public office the rank of medical men in army and navy would be higher, a sanitorian would be deemed as important in the cabinet as a jurist. Medical merit would receive deserved recognition, the welfare of the people would be even more promoted than that of agriculture now is, and the interests of the profession would be enhanced before the people.

The New Paper Money is quite handsome in design and we note the faces of scores of dead patriots of the past, but where is the face of Dr. Benjamin Rush, signer of the Declaration, member of the Continental Congress and Surgeon General of the Continental army?

The Second Annual Meeting of the Association of Southern Hospitals for the Insane held at Battery Park Hotel, Asheville, N. C., beginning Wednesday, September 16th, 1896, and ending September 17th, was an interesting convocation of the clinical psychiatric talent of the south. The meetings were presided over and addressed by the

President, Charles G. Hill, M. D. An address of welcome was delivered by the mayor of Asheville and responded to by the President of the association.

Afternoon session at 3 P. M., papers were read by J. W. Trammell, Superintendent, State Asylum, Chattahoochie, Fla., on the "Maintenance and Management of Institutions for the Care of the Insane"; W. F. Drewry, M. D., Central Hospital, Petersburg, Va. on "The Thyroid Treatment of Insanity." The discussion of the "State Care of Chronic Insane" was opened by P. L. Murphy, M. D., Superintendent State Hospital, Morganton, N. C. "The Medication of the Insane" was the subject of a paper by E. D. Bondurant, M. D., Bryce Hospital, Tuscaloosa, Ala. The subject "Epileptics in Hospitals for the Insane" was presented by I. M. Taylor, M. D., State Hospital, Morganton, N. C. "Has Emancipation been Prejudicial to the Mental and Physical Health of the Negro" was discussed by J. F. Miller, M. D., Eastern Hospital, Goldsboro, N. C., and others. M. Campbell, M. D., superintendent Eastern Hospital, Knoxville, Tenn., contributed "Recent Observations in European Asylums," and the whole was concluded by a trip for members to Hot Springs after adjournment.

This association is doing good practical work for the advancement of clinical psychiatry in America.

How is this, Doctor Putnam?—You are reported in the *Boston Medical and Surgical Journal* as making the following remarkable statement concerning a new early sign of tabes: In a patient with tabes, it is often possible to flex the leg at the hip without bending the knee until the toe almost touches the ear, without producing the sense of painful tension in the popliteal space so speedily felt by one in health. This is not only an interesting feature of advanced cases, but is a valuable early diagnostic sign.

In the outstretched leg the toe is far from the ear even if the leg could be brought in close touch with the ear.

Illinois Eastern Hospital for the Insane, Hospital, Illinois.—The sample of the new examination forms shows an aim at scientific minuteness of detail not before attempted. These blanks are the outgrowth of about a year and a half's work under an unprinted outline and will materially serve to aid the medical profession in clinically studying their cases. Dr. Clarke Gopen, the accomplished superintendent, is making an effort in the right direction.

The Meeting of the Mississippi Valley Medical Association at St. Paul, Sept. 16-18, while not so large in point of number in attendance as was anticipated, was a scientific and social success.

The following officers were elected for the ensuing year: President, Dr. Thomas Hunt Stuckey, Louisville; First Vice-President, Dr. Chas. A. Wheaton, St. Paul; Second Vice-President, Dr. Paul Paquin, St. Louis; Secretary, Dr. H. W. Loeb, St. Louis; Treasurer, Dr. W. N. Wishard, Indianapolis.

Louisville was selected as the next place of meeting.

REVIEWS, BOOK NOTICES, ETC.

BOOKS AND REVIEWERS. The *Polyclinic* thus truly remarks on this subject:

Before and since the time of Byron, authors and critics have had occasion to differ. Miss Marie Corelli is one of the most recent examples in general literature of an author who asserts that personal considerations lead to the favorable or unfavorable notice of books more often than the merits or demerits of the work. These assertions, although they doubtless exaggerate and distort the facts, are not altogether unfounded. Similar assertions are sometimes made, and we are afraid, with more than a little truth, concerning notice of medical books.

Few medical journals nowadays do, indeed, review books in any true sense of the word. A longer or shorter "notice," more or less laudatory according to the influence of the publisher or the personal relations of the author with editor and reviewer, is the rule. Sometimes these notices are furnished by the publisher or author and the editor or his assistant is thus relieved alike of trouble and responsibility. Occasionally, however, a review or unusually lengthy notice of a particular book creeps in, and one can often detect therein an animus favorable or otherwise. As to the first, there is little to be said. "You tickle me and I'll tickle you," is a principle of action older than humanity; its first utterance may well have been from one of our batrachian ancestors. That the judgment of the profession is misrepresented, that buyers are misled into wasting their money on worthless trash, and that bubble reputations are given ephemeral life, is true, but these things time, at last, makes even. When, however, personal spite, often working in the dark, seeking cover under anonymity, is permitted to decry unjustly a meritorious work, or to harp only upon the faults of a work containing striking merits as well as striking faults, the editor who permits this should be held responsible before the bar of professional opinion. A critic has the right, is in duty bound, to warn against the errors, which he believes to be contained in the book given him to review, but he is likewise bound to point them out explicitly, not by insinuation, and he should never be ashamed to append his initials to an honest expression of honest opinion. Medical reviewing (we may say in parenthesis) has been largely overdone. Too much free advertising and too much valuable space has been given without compensation. This is not business, hence the discontinuance of lengthy reviews in this Journal, except where some interested reader wishes to discuss *in extenso* the merits of a particular book.

This change of policy, however, will not rule out the usual brief notices of new and meritorious publications sent us.

MEXICO UNDER X RAYS. A Work on Political Economy, by Col. W. F. Cloud, a veteran of the Mexican and late war.

The Tragedies, Revolutions and Evolutions connected with Mexico's Political History from Cortez, 1521, to Diaz, 1896, are graphically written up in chronological order with names and deeds of Mexico's Grand Statesmen and Patriots, and of her Demagogues and Spoilers. Data from Spanish Books and Records. Also a brief History of the War with the United States. 340 Pages, 12 mo. Illustrated. Cloth Bound \$1.00, 15 Cts. extra by Mail. Libraries, Schools, & C., 10 per cent. Discount. 1431 Harrison Street, Kansas City, Mo.

ANATOMICAL AND PATHOLOGICAL MODELS Manufactured by the Fuller Anatomical Co., Grand Rapids, Mich.

These casts are artistically colored, and are accompanied by beautifully engraved original plates, upon which are inscribed the names of the several parts, so that at a glance and without reference, the anatomy can be easily understood, and what has been produced by years of patient labor, can be acquired with very little effort and within a short time.

From a personal knowledge of these casts, we can recommend them to physicians and students as superior to anything else in this line ever brought to our notice.

RECHERCHES CLINIQUES & THERAPEUTIQUES SUR L'EPILEPSIE L'HYSERIE ET L'IDIOTIE Compte rendu du service des enfants idiots, épileptique et arriérés de Bicêtre pour l'année 1895. Par Bourneville. Avec la collaboration de MM. Boncourt, Comte, Dardel, Dubarry, Lerche, Lombard, J. Noir, Pilliet, Ruel, Sollier et Tissier, internes ou anciens internes du service. Tome XIV. Un beau volume in-8° de Lxxi-254 pages, avec 31 figures et 8 plancoes hors texte,—Prix : 6 fr.

HYPEROSTOSIS CRANII with the Reports of Four New Cases; a Fifth Case Contributed by Dr. Morton Prince; and Photographs of a Specimen in the Army Medical Museum. By James J. Putman, M. D., of Boston.

This is an especially valuable contribution to this rare and interesting subject. The paper is enriched with illustrations and enhanced by a complete reference appendix.

A TREATISE ON APPENDICITIS. By John B. Deaver, M. D., Surgeon to the German Hospital, Philadelphia. P. Blakiston, Son & Co., Publishers, 1012 Walnut Street, Philadelphia.

This book contains 32 full page plates and other illustrations, many of them colored. These and the good name of the author commend it to the surgeon.

Glioma of the Brain of Twenty-Seven Months Duration. Beginning in the Middle of the Left Rolandic Region, with Jacksonian Epilepsy, Infiltration of the Entire Frontal Lobe; Dementia; Aphasia; Late Operation; Death from Suppurative Meningitis. By J. T. Eskridge, M. D., Neurologist to Arapahoe County and St. Luke's Hospitals, Denver, Colo.

Clinical Observations upon the Use of Antitoxin in Diphtheria, and a Report of a Personal Investigation of this Treatment in the Principal Fever Hospitals of Europe during the Summer of 1895 By Joseph E. Winters, M. D., Professor of Diseases of Children, Medical Department, New York University, New York City.

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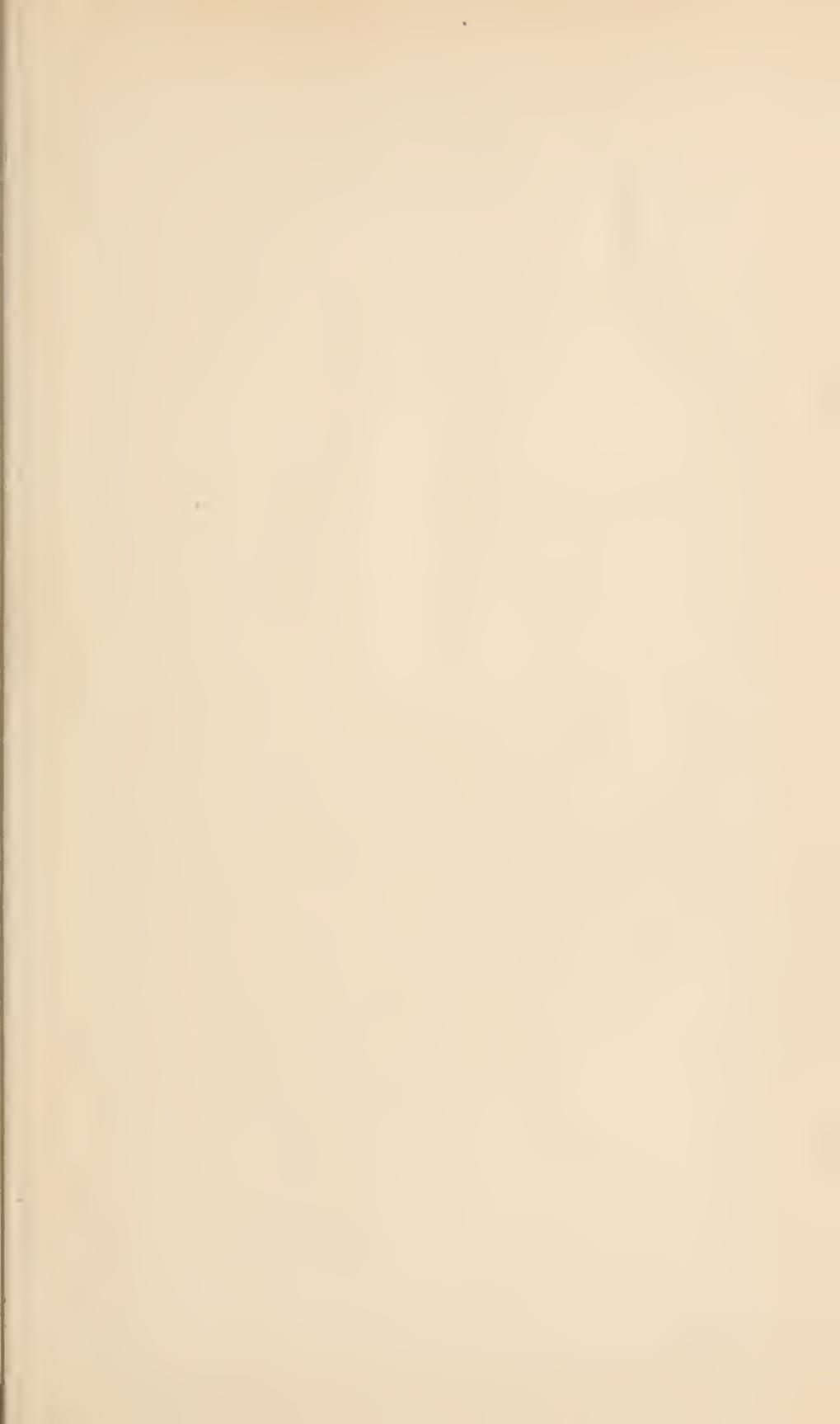
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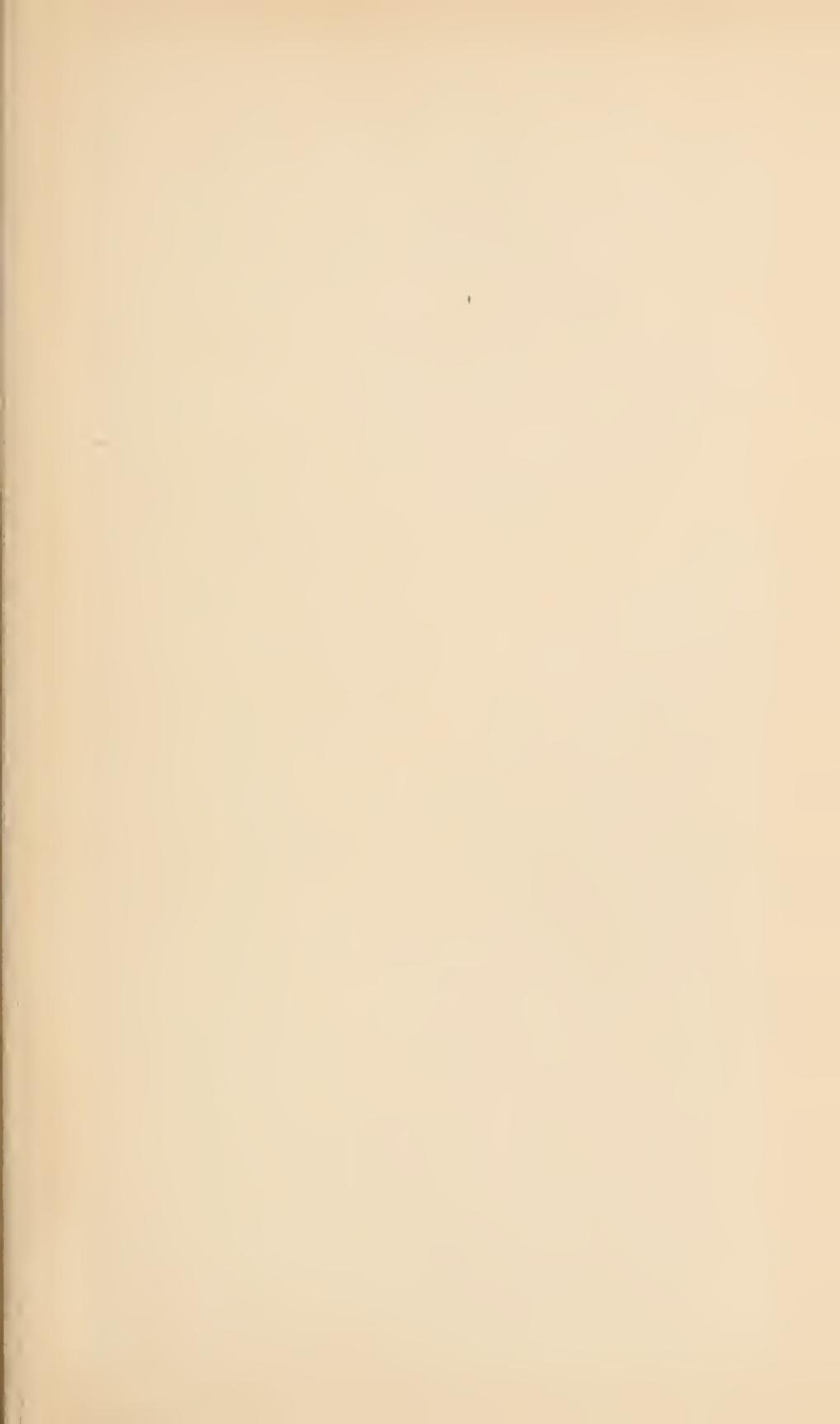
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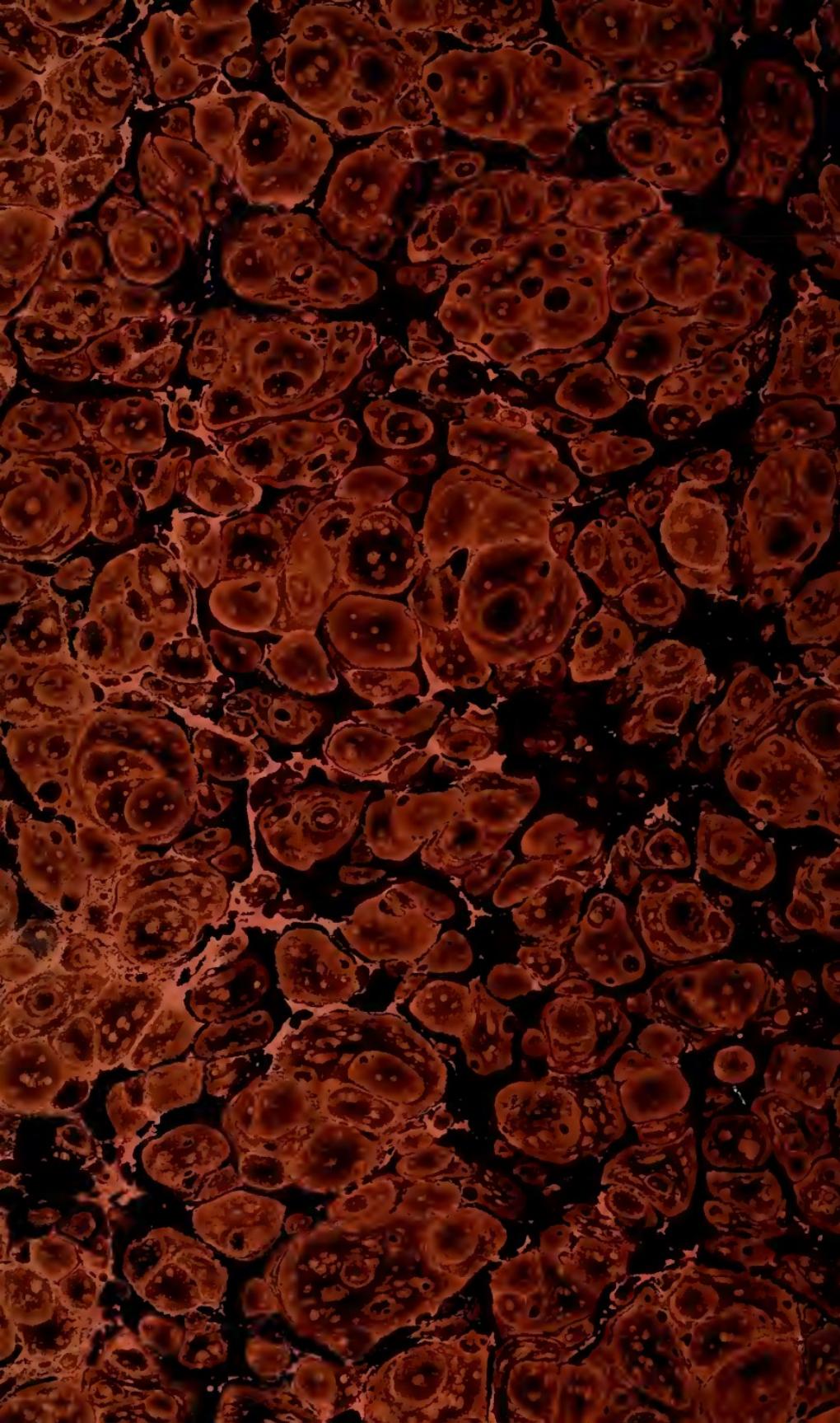
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